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FINAL ENVIRONMENTAL STATEMENT

For a Proposed
1973 OUTER CONTINENTAL SHELF
OIL AND GAS GENERAL LEASE SALE
OFFSHORE MISSISSIPPI, ALABAMA, AND FLORIDA

OCS SALE NO. 32
FES 73-60

Volume 5 of 5

Attachments

Prepared by the
BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR

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Director

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Notice to Lessees and Operators Of Federal

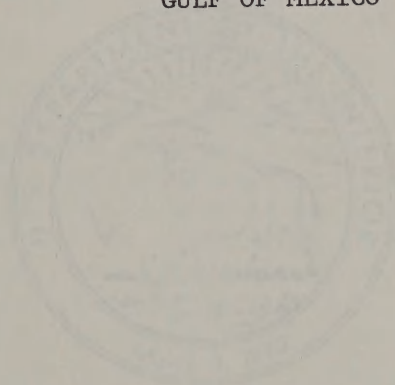
Oil, Gas, And Sulphur Leases

In The Outer Continental Shelf

Gulf Of Mexico Area

ATTACHMENT A

OCS OPERATING ORDERS NOS. 1 THROUGH 12
GULF OF MEXICO



UNITED STATES
DEPARTMENT OF THE INTERIOR

GEORGE W. HODGES
Assistant Secretary
Bureau of Land Management
Washington, D.C. 20246

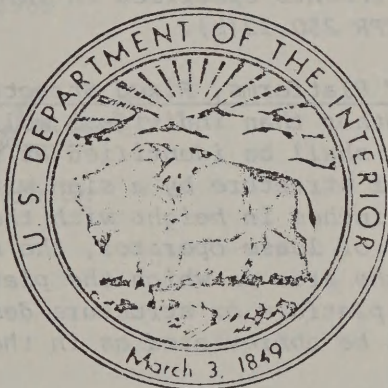
Notice to Lessees and Operators Of Federal

Oil, Gas, And Sulphur Leases

In The Outer Continental Shelf

Gulf Of Mexico Area

OCS Order Nos. 1 through 12—Gulf of Mexico



UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY
CONSERVATION DIVISION
Branch Of Oil and Gas Operations
Gulf Of Mexico Area

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

MARKING OF WELLS, PLATFORMS, AND FIXED STRUCTURES

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.37. Section 250.37 provides as follows:

Well designations. The lessee shall mark promptly each drilling platform or structure in a conspicuous place, showing his name or the name of the operator, the serial number of the lease, the identification of the wells, and shall take all necessary means and precautions to preserve these markings.

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. Identification of Platforms, Fixed Structures. Platforms and structures, other than individual wellhead structures and small structures, shall be identified at two diagonal corners of the platform or structure by a sign with letters and figures not less than 12 inches in height with the following information: The name of lease operator, the name of the area, the block number of the area in which the platform or structure is located, and the platform or structure designation. The information shall be abbreviated as in the following example:

"The Blank Oil Company operates 'C' platform in Block 37 of South Timbalier Area."

The identifying sign on the platform would show:

"BOC - S.T. - 37 - C."

2. Identification of Single Well Structures and Small Structures. Single well and small structures may be identified with one sign only, with letters and figures not less than 3 inches in

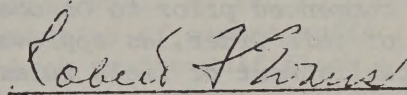
height. The information shall be abbreviated as in the following example:

"The Blank Oil Company operates well No. 1 which is equipped with a protective structure, in Block 68 in the East Cameron Area."

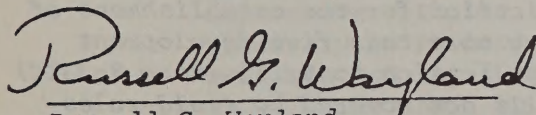
The identifying sign on the protective structure would show:

"BOC - E.C. - 68 - No. 1"

3. Identification of Wells. The OCS lease and well number shall be painted on, or a sign affixed to, each singly completed well. In multiple completed wells each completion shall be individually identified at the well head. All identifying signs shall be maintained in a legible condition.


Robert F. Evans
Supervisor

Approved: August 28, 1969


Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

DRILLING PROCEDURES OFF LOUISIANA AND TEXAS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.34, 250.41 and 250.91. All exploratory wells drilled for oil and gas shall be drilled in accordance with the provisions of this Order. Initial development wells drilled for oil and gas shall be drilled in accordance with the provisions of this Order which shall continue in effect until field rules are issued. After field rules have been established by the supervisor, development wells shall be drilled in accordance with such rules; except that in fields containing more than five development wells, additional development wells commenced prior to October 1, 1969, may be excluded from provisions of this Order, as approved by the supervisor, to permit time for the establishment of field rules.

Where sufficient geologic and engineering information is obtained through exploratory drilling, operators may make application to the supervisor for the establishment of field rules, but the operator(s) shall make such application before more than five development wells have been drilled in the field. Operators may also make application for the establishment of field rules for existing fields containing more than five development wells on the date of this Order. Each Application to Drill (Form 9-331C) for exploratory wells and development wells not covered by field rules shall include all information required under 30 CFR 250.91 and the integrated casing, cementing, mud, and blowout prevention program for the well, and shall comply with the following requirements. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. Well Casing and Cementing. All wells shall be cased and cemented in accordance with the requirements of 30 CFR 250.41(a)(1). The Application to Drill (Form 9-331C) shall contain a statement that all zones which contain oil, gas, or fresh water shall be fully protected by casing and cement. For the purpose of this Order, the several casing strings in order of normal installation are drive or structural casing, conductor casing, surface casing, intermediate casing, and production casing. All depths refer to true vertical depth (TVD).

- A. Drive or Structural Casing. This casing shall be set by drilling, driving, or jetting to a minimum depth of 100 feet below the Gulf floor or to such greater depth required to support unconsolidated deposits and to provide hole stability for initial drilling operations. If drilled in, the drilling fluid shall be a type that will not pollute the Gulf, and a quantity of cement sufficient to fill the annular space back to the Gulf floor must be used.
- B. Conductor and Surface Casing - General Principles. Determination of proper casing setting depths shall be based upon all geologic factors including the presence or absence of hydrocarbons and water depths on a well-for-well basis. The setting depths of all casing strings shall be determined by taking into account formation fracture gradients and hydrostatic pressure to be contained within the well bore. The conductor and surface casing shall be new pipe or reconditioned pipe that has been tested and inspected to verify a new condition.
- (1) Conductor Casing. This casing shall be set in accordance with the table below. A quantity of cement sufficient to fill the annular space back to the Gulf floor must be used. The cement may be washed out or displaced to a depth of 40 feet below the Gulf floor to facilitate casing removal upon well abandonment.
- (2) Surface Casing. This casing shall be set at a depth in accordance with the table below and cemented in a manner necessary to protect all fresh water sands and provide well control until the next string of casing is set. This casing shall be cemented with a quantity sufficient to fill the calculated annular space to (a) at least 1,500 feet above the casing shoe, or (b) within 200 feet below the conductor casing. Whenever there are any indications of improper cementing, such as lost returns, cement channeling, or mechanical failure of equipment, a temperature or cement bond survey shall be run, either before or after remedial cementing, to aid in determining whether the casing is properly cemented. If the annular space is not adequately cemented by the primary operation, the operator shall either recement or squeeze cement the shoe after drilling out.
- (3) Conductor and Surface Casing Setting Depths. These strings of casing shall be set at the depths specified in the following table subject to minor variation to permit the

casing to be set in a competent bed; provided, however, that the conductor casing shall be set before drilling into shallow formations known to contain oil or gas or, if unknown, upon encountering such formations. These casing strings shall be run and cemented prior to drilling below the specified setting depths. For those wells which may encounter abnormal pressure conditions, the district engineer may prescribe the exact setting depth within the ranges specified below.

Required Setting Depth Below Gulf Floor (TVD in feet)

Proposed Total Depth of Well or Depth of First Full String of Intermediate Casing (TVD in feet from Rotary Table)

	Surface Casing		Conductor Casing	
	Minimum	Maximum	Minimum	Maximum
0 - 7,000	1,500	2,500	300	800
7,000 - 9,000	1,750	3,000	400	800
9,000 -11,000	2,250	3,500	500	900
11,000 -13,000	3,000	4,000	600	900
13,000 -Below	3,500	4,500	700	1,000

- C. Intermediate Casing. This string of casing shall be set when required by anticipated abnormal pressure, mud weights, sediment and other well conditions. The intermediate casing shall be new pipe or reconditioned pipe that has been tested and inspected to verify a new condition. A quantity of cement sufficient to cover and isolate all hydrocarbon zones and to isolate abnormal pressure intervals from normal pressure intervals shall be used. If a liner is used as an intermediate string, the cement shall be tested by a fluid entry or pressure test to determine whether a seal between the liner top and next larger string has been achieved. The test shall be recorded on the driller's log. When such liner is used as production casing, it shall be extended to the surface and cemented to avoid surface casing being used as production casing.
- D. Production Casing. This string of casing shall be set before completing the well for production. The production casing shall be new pipe or reconditioned pipe that has been tested and inspected to verify a new condition. It shall be cemented in a manner necessary to cover or isolate all zones which contain hydrocarbons, but in any case, a calculated volume sufficient to fill the annular space at least 500 feet above the uppermost producible hydrocarbon zone must be used. When a liner is used as production casing, the testing of the seal between the liner top and next larger string shall be conducted as in the case of intermediate liners.

E. Pressure Testing. Prior to drilling the plug after cementing, all casing strings, except the drive or structural casing, shall be pressure tested as shown in the table below. This test shall not exceed the working pressure of the casing. The surface casing shall be tested with water in the top 100 feet of the casing. If the pressure declines more than 10% in 30 minutes, or if there is other indication of a leak, the casing shall be recemented, repaired, or an additional casing string run, and the casing shall be tested again in the same manner.

<u>Casing String</u>	<u>Minimum Pressure Test (psi)</u>
Conductor	200
Surface	1,000
Intermediate	1,500 or 0.2 psi/ft., whichever is greater
Liner	1,500 or 0.2 psi/ft., whichever is greater
Production	1,500 or 0.2 psi/ft., whichever is greater

After cementing any of the above strings, drilling shall not be commenced until a time lapse of:

(1) 24 hours, or

(2) 8 hours under pressure for conductor casing string.
12 hours under pressure for all other strings.

(Cement is considered under pressure if one or more float valves are employed and are shown to be holding the cement in place or when other means of holding pressure is used.)

All casing pressure tests shall be recorded on the driller's log.

2. Blowout Prevention Equipment. Blowout preventers and related well control equipment shall be installed, used, and tested in a manner necessary to prevent blowouts. Prior to drilling below the conductor casing, blowout prevention equipment shall be installed and maintained ready for use until drilling operations are completed, as follows:

A. Conductor Casing. Before drilling below this string, at least one remotely controlled bag-type blowout preventer and equipment for circulating the drilling fluid to the drilling structure or vessel shall be installed. To avoid formation fracturing from complete shut-in of the well, a large diameter pipe with control valves shall be installed on the conductor casing below the blowout preventer so as to permit the diversion of hydrocarbons and

other fluids; except that when the blowout preventer assembly is on the Gulf floor, the choke and kill lines shall be equipped to permit the diversion of hydrocarbons and other fluids.

- B. Surface Casing. Before drilling below this string the blowout prevention equipment shall include a minimum of: (1) three remotely controlled, hydraulically operated, blowout preventers with a working pressure which exceeds the maximum anticipated surface pressure, including one equipped with pipe rams, one with blind rams, and one bag-type; (2) a drilling spool with side outlets, if side outlets are not provided in the blowout preventer body; (3) a choke manifold; (4) a kill line; and (5) a fill-up line.
- C. Intermediate Casing. Before drilling below this string the blowout prevention equipment shall include a minimum of: (1) four remotely controlled, hydraulically operated, blowout preventers with a working pressure which exceeds the maximum anticipated surface pressure, including at least one equipped with pipe rams, one with blind rams, and one bag-type; (2) a drilling spool with side outlets, if side outlets are not provided in the blowout preventer body; (3) a choke manifold; (4) a kill line; and (5) a fill-up line.
- D. Testing. Ram-type blowout preventers and related control equipment shall be tested with water to the rated working pressure of the stack assembly or to the working pressure of the casing, whichever is the lesser, (1) when installed; (2) before drilling out after each string of casing is set; (3) not less than once each week while drilling; and (4) following repairs that require disconnecting a pressure seal in the assembly. The bag-type blowout preventer shall be tested to 70 percent of the above pressure requirements.

While drill pipe is in use ram-type blowout preventers shall be actuated to test proper functioning once each trip, but in no event less than once each day. The bag-type blowout preventer shall be actuated on the drill pipe once each week. Accumulators or accumulators and pumps shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. A blowout prevention drill shall be conducted weekly for each drilling crew to insure that all

equipment is operational and that crews are properly trained to carry out emergency duties. All blowout preventer tests and crew drills shall be recorded on the driller's log.

E. Other Equipment. An inside blowout preventer assembly (back pressure valve) and drill string safety valve in the open position shall be maintained on the rig floor at all times while drilling operations are being conducted. Separate valves shall be maintained on the rig floor to fit all pipe in the drill string. A Kelly cock shall be installed below the swivel, and an essentially full opening Kelly cock shall be installed at the bottom of the Kelly of such design that it can be run through the blowout preventers.

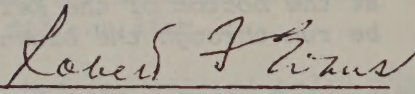
3. Mud Program - General. The characteristics, use, and testing of drilling mud and the conduct of related drilling procedures shall be such as are necessary to prevent the blowout of any well. Quantities of mud materials sufficient to insure well control shall be maintained readily accessible for use at all times.

A. Mud Control. Before starting out of hole with drill pipe, the mud shall be circulated with the drill pipe just off bottom until the mud is properly conditioned. When coming out of the hole with drill pipe, the annulus shall be filled with mud before the mud level drops below 100 feet, and a mechanical device for measuring the amount of mud required to fill the hole shall be utilized. The volume of mud required to fill the hole shall be watched, and any time there is an indication of swabbing, or influx of formation fluids, the necessary safety device(s) required in subparagraph 2(E) above shall be installed on the drill pipe, the drill pipe shall be run to bottom, and the mud properly conditioned. The mud shall not be circulated and conditioned except on or near bottom, unless well conditions prevent running the pipe to bottom. The mud in the hole shall be circulated or reverse circulated prior to pulling drill stem test tools from the hole.

B. Mud Testing Equipment. Mud testing equipment shall be maintained on the drilling platform at all times, and mud tests shall be performed daily, or more frequently as conditions warrant.

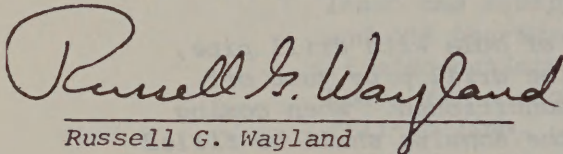
The following mud system monitoring equipment must be installed (with derrick floor indicators) and used throughout the period of drilling after setting and cementing the conductor casing:

- (1) Recording mud pit level indicator to determine mud pit volume gains and losses. This indicator shall include a visual or audio warning device.
- (2) Mud volume measuring device for accurately determining mud volumes required to fill the hole on trips.
- (3) Mud return indicator to determine that returns essentially equal the pump discharge rate.



Robert F. Evans
Supervisor

Approved: August 28, 1969



Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

PLUGGING AND ABANDONMENT OF WELLS

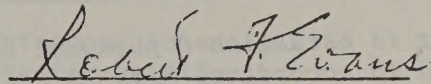
This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.15. The operator shall comply with the following minimum plugging and abandonment procedures which have general application to all wells drilled for oil and gas. Plugging and abandonment operations must not be commenced prior to obtaining approval from an authorized representative of the Geological Survey. Oral approvals shall be in accordance with 30 CFR 250.13. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. Permanent Abandonment.

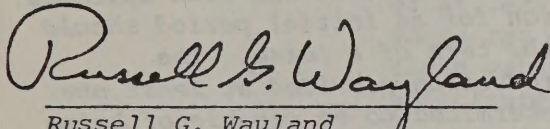
- A. Isolation in Uncased Hole. In uncased portions of wells, cement plugs shall be spaced to extend 100 feet below the bottom to 100 feet above the top of any oil, gas, and fresh water zones so as to isolate them in the strata in which they are found and to prevent them from escaping into other strata.
- B. Isolation of Open Hole. Where there is open hole (uncased and open into the casing string above) below the casing, a cement plug shall be placed in the deepest casing string by (1) or (2) below, or in the event lost circulation conditions exist or are anticipated, the plug may be placed in accordance with (3) below:
- (1) A cement plug placed by displacement method so as to extend a minimum of 100 feet above and 100 feet below the casing shoe.
 - (2) A cement retainer with effective back pressure control set not less than 50 feet, nor more than 100 feet, above the casing shoe with a cement plug calculated to extend at least 100 feet below the casing shoe and 50 feet above the retainer.
 - (3) A permanent type bridge plug set within 150 feet above the casing shoe with 50 feet of cement on top of the bridge plug. This plug shall be tested prior to placing subsequent plugs.

- C. Plugging or Isolating Perforated Intervals. A cement plug shall be placed opposite all open perforations (perforations not squeezed with cement) extending a minimum of 100 feet above and 100 feet below the perforated interval or down to a casing plug whichever is less. In lieu of the cement plug, a bridge plug set at a maximum of 150 feet above the open perforations with 50 feet of cement on top may be used provided the perforations are isolated from the hole below.
- D. Plugging of Casing Stubs. If casing is cut and recovered, a cement plug 200 feet in length shall be placed to extend 100 feet above and 100 feet below the stub. A retainer may be used in setting the required plug.
- E. Plugging of Annular Space. No annular space that extends to the Gulf floor shall be left open to drilled hole below. If this condition exists, the annulus shall be plugged with cement.
- F. Surface Plug Requirement. A cement plug of a least 150 feet, with the top of the plug 150 feet or less below the Gulf floor, shall be placed in the smallest string of casing which extends to the surface.
- G. Testing of Plugs. The setting and location of the first plug below the top 150-foot plug, will be verified by either (1) placing a minimum pipe weight of 15,000 pounds on the plug, or (2) testing with a minimum pump pressure of 1,000 psig with no more than a 10 percent pressure drop during a 15-minute period.
- H. Mud. Each of the respective intervals of the hole between the various plugs shall be filled with mud fluid of sufficient density to exert hydrostatic pressure exceeding the greatest formation pressure encountered while drilling such interval.
- I. Clearance of Location. All casing and piling shall be severed and removed to at least 15 feet below the Gulf floor and the location shall be dragged to clear the well site of any obstructions.

2. Temporary Abandonment. Any drilling well which is to be temporarily abandoned shall be mudded and cemented as required for permanent abandonment except for requirements F and I of paragraph 1 above. When casing extends above the Gulf floor, a mechanical bridge plug (retrievable or permanent) shall be set in the casing between 15 and 200 feet below the Gulf floor.


Robert F. Evans
Supervisor

Approved: August 28, 1969


Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

SUSPENSIONS AND DETERMINATION OF WELL PRODUCIBILITY

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.12(d)(1). An OCS lease provides for extension beyond its primary term for as long as oil or gas may be produced from the lease in paying quantities. An OCS lease may be maintained beyond the primary term, in the absence of actual production, when a suspension of operations or production, or both, has been approved. An application for suspension of production for an initial period should be submitted prior to the expiration of the term of a lease. The supervisor may approve a suspension of production provided at least one well has been drilled on the lease and determined to be capable of being produced in paying quantities. The temporary or permanent abandonment of a well will not preclude approval of a suspension of production as provided in 30 CFR 250.12(d)(1). Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

A well may be determined to be capable of producing in paying quantities when the requirements of either 1 or 2 below have been met.

1. Production Tests.

- A. Oil Wells. A production test of at least two hours duration, following stabilization, is required.
- B. Gas Wells. A deliverability test of at least two hours duration, following stabilization, or a four-point back-pressure test, is required.
- C. Witnessing and Results. All tests must be witnessed by an authorized representative of the Geological Survey. Test data accompanied by operator's affidavit, or third-party test data, may be accepted in lieu of a witnessed test provided prior approval is obtained from the appropriate district office. The results of the witnessed or accepted test must justify a determination that the well is capable of producing in paying quantities.

2. Production Capability. Information for determining producibility should be submitted in time to permit one week for evaluation and determination. In cases of urgency, determinations may be conveyed orally. The following may be considered as acceptable evidence that a well is capable of producing in paying quantities:

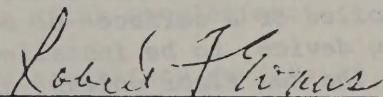
A. An induction-electric log of the well, clearly showing a minimum of 15 feet of producible sand in one section which does not include any interval which appears to be water saturated. All of the section counted as producible must exhibit the following properties:

- (1) Electrical spontaneous potential exceeding 20 negative millivolts beyond the shale base line. If mud conditions prevent a 20 negative millivolt reading beyond the shale base line, a gamma ray log deflection of at least 70 percent of the maximum gamma ray deflection in the nearest clean water bearing sand may be substituted.
- (2) A minimum true resistivity ratio of the producible section to the nearest clean water sand of at least 5:1, provided the producible section exhibits a minimum resistivity of 2.0 ohm-meters.
- (3) A porosity log indicating porosity in the producible section.

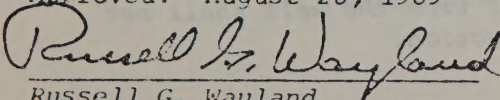
B. Sidewall cores and core analysis which indicates that the section is producible.

C. A wire line formation test or evidence that an attempt was made to obtain such test. The test results must indicate that the section is producible.

D. All logs run must support other evidence that the section is producible.


Robert F. Evans
Supervisor

Approved: August 28, 1969


Russell G. Wayland
Chief, Conservation Division

UNITED STATES
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BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

INSTALLATION OF SUBSURFACE SAFETY DEVICE

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.41(b). Section 250.41(b) provides as follows:

- (b) Completed Wells. In the conduct of all its operations, the lessee shall take all steps necessary to prevent blowouts, and the lessee shall immediately take whatever action is required to bring under control any well over which control has been lost. The lessee shall: (1) in wells capable of flowing oil or gas, when required by the supervisor, install and maintain in operating condition storm chokes or similar subsurface safety devices; (2) for producing wells not capable of flowing oil or gas, install and maintain surface safety valves with automatic shutdown controls; and (3) periodically test or inspect such devices or equipment as prescribed by the supervisor.

The operator shall comply with the following requirements. All departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b). All applications for approval under the provisions of this Order shall be submitted to the appropriate District office. References in this Order to approvals, determinations, or requirements are to those given or made by the Supervisor or his delegated representative.

1. Installation. All new and existing tubing installations open to hydrocarbon-bearing zones shall be equipped with a subsurface-controlled or a surface- or other remotely controlled subsurface safety device, to be installed at a depth of 100 feet or more below the sea floor unless, after application and justification, the well is determined to be incapable of flowing oil or gas. These installations shall be made as required in subparagraphs A and B below within two (2) days after stabilized production is established, and during this period of time the well shall not be left unattended while open to production.

A. New Wells. All tubing installations in wells completed after December 1, 1972, shall be equipped with a surface- or other remotely controlled subsurface safety device; provided, that wells with a shut-in tubing pressure of 4,000 psig or greater shall be equipped with a subsurface-controlled subsurface safety device in lieu of a surface- or other remotely controlled subsurface safety device unless a surface- or other remotely controlled subsurface safety device is approved or required. When the shut-in tubing pressure declines below 4,000 psig, a surface- or other remotely controlled subsurface safety device shall be installed when the tubing is first removed and reinstalled.

B. Existing Wells. All tubing installations in wells existing on the date of this Order shall be equipped with a surface- or other remotely controlled subsurface safety device when the tubing is first removed and reinstalled after December 1, 1972; provided, that wells with a shut-in tubing pressure of 4,000 psig or greater shall be equipped with a subsurface-controlled subsurface safety device in lieu of a surface- or other remotely controlled subsurface safety device unless a surface- or other remotely controlled subsurface safety device is approved or required. When the shut-in tubing pressure declines below 4,000 psig, a surface- or other remotely controlled subsurface safety device shall be installed when the tubing is first removed and reinstalled.

Tubing installations in existing wells completed from single-well and multi-well satellite caissons or jackets and sea-floor completions may be equipped with a subsurface-controlled subsurface safety device, in lieu of a surface- or other remotely controlled subsurface safety device, upon application, justification, and approval.

C. Shut-in Wells. A tubing plug shall be installed in lieu of, or in addition to, other subsurface safety devices if a well has been shut in for a period of six (6) months. Such plugs shall be set at a depth of 100 feet or more below the sea floor. All retrievable plugs installed after the date of this Order shall be of the pump-through type. All wells perforated and completed, but not placed on production, shall be equipped with a subsurface safety device or tubing plug within two (2) days after completion.

D. Injection Wells. Subsurface safety devices as required in subparagraphs A and B above shall be installed in all injection wells unless, after application and justification, it is determined that the well is incapable of flowing oil or gas, which condition shall be verified annually.

2. Technological Advancement. As technological research progress, and product improvement result in increased effectiveness of existing safety devices or the development of new devices or systems, such devices or systems may be required or used upon application, justification, and approval. Applications for routine use shall include evidence that the device or system has been field-tested at least once each month for a minimum of six (6) consecutive months, and that each test indicated proper operation.
3. Testing and Inspection. Subsurface safety devices shall be designed, adjusted, installed, and maintained to insure reliable operation. During testing and inspection procedures, the well shall not be left unattended while open to production unless a properly operating subsurface safety device has been installed in the well.
 - A. Surface-Controlled Subsurface Safety Devices. Each surface- or other remotely controlled subsurface safety device installed in a well shall be tested in place for proper operation when installed and thereafter at intervals not exceeding six (6) months. If the device does not operate properly, it shall be removed, repaired, and reinstalled or replaced and tested to insure proper operation.
 - B. Subsurface-Controlled Subsurface Safety Devices. Each subsurface-controlled subsurface safety device installed in a well shall be removed, inspected, and repaired or adjusted as necessary and reinstalled at intervals not exceeding six (6) months; provided, that such removable devices set in a landing nipple shall be removed, inspected, and repaired or adjusted as necessary and reinstalled at intervals not exceeding twelve (12) months. Each velocity-type device shall be designed to close at a flow rate not to exceed the larger of either 150 percent of, or 200 BFPD above, the most recent well-test rate which equals or exceeds the approved production rate. The above closing flow rate shall not exceed the calculated capacity of the well to produce against a flowing wellhead pressure of 50 psig. Each preset tubing-pressure-actuated device shall be designed to close prior to reduction of the flowing wellhead pressure to 50 psig.
 - C. Tubing Plugs. A shut-in well equipped with a tubing plug shall be inspected for leakage by opening the well to possible flow at intervals not exceeding six (6) months. If sustained liquid flow exceeds 400 cc/min., or gas flow exceeds 15 cu. ft./min., the plug shall be removed, repaired, and reinstalled or an additional tubing plug installed to prevent leakage.

4. Temporary Removal. Each wireline- or pumpdown-retrievable subsurface safety device may be removed, without further authority or notice, for a routine operation which does not require approval of a Sundry Notice and Report on Wells (Form 9-331) for a period not to exceed fifteen (15) days. The well shall be clearly identified as being without a subsurface safety device and shall not be left unattended while open to production. The provisions of this paragraph are not applicable to the testing and inspection procedures in paragraph 3 above.
5. Additional Protective Equipment. All tubing installations made after the date of this Order in which a wireline- or pumpdown-retrievable subsurface safety device is to be installed shall be equipped with a landing nipple, with flow couplings or other protective equipment above and below, to provide for setting of the subsurface safety device. All wells in which a subsurface safety device or tubing plug is installed shall have the tubing-casing annulus packed off above the uppermost open casing perforations. The control system for all surface-controlled subsurface safety devices shall be an integral part of the platform shut-in system, or of an independent remote shut-in system.
6. Departures. All departures (or waivers) approved prior to the date of this Order are hereby terminated as of December 1, 1972, unless new applications are submitted prior to that date. All such new applications will be considered for approval pursuant to 30 CFR 250.12(b) and the requirements of this Order. All applications for departures shall include a detailed statement of the well conditions, efforts made to overcome any difficulties, and proposed alternate safety measures.
7. Emergency Action. All tubing installations open to hydrocarbon-bearing zones and not equipped with a subsurface safety device as permitted by this Order shall be clearly identified as not being so equipped, and a subsurface safety device or tubing plug shall be available at the field location. In the event of an emergency, such as an impending hurricane, such device or plug shall be promptly installed within the limits of practicability, due consideration being given to personnel safety.
8. Records. The operator shall maintain the following records for a minimum period of one year for each subsurface safety device and tubing plug installed, which records shall be available to any authorized representative of the Geological Survey.
 - A. Field Records. Individual well records shall be maintained at or near the field and shall include, as a minimum, the following information:

- (1) A record which will give design and other information; i.e., make, model, type, spacers, bean and spring size, pressure, etc.
- (2) Verification of assembly by a qualified person in charge of installing the device and installation date.
- (3) Verification of setting depth and all operational tests as required in this Order.
- (4) Removal date, reason for removal, and reinstallation date.
- (5) A record of all modifications of design in the field.
- (6) All mechanical failures or malfunctions, including sand-cutting, of such devices, with notation as to cause or probable cause.
- (7) Verification that a failure report was submitted.

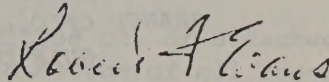
B. Other Records. The following records, as a minimum, shall be maintained at the operator's office:

- (1) Verified design information of subsurface-controlled subsurface safety devices for the individual well.
- (2) Verification of assembly and installation according to design information.
- (3) All failure reports.
- (4) All laboratory analysis reports of failed or damaged parts.
- (5) Quarterly failure-analysis report.

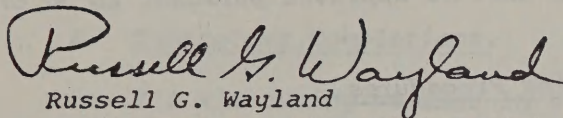
9. Reports. Well completion reports (Form 9-330) and any subsequent reports of workover (Form 9-331) shall include the type and the depth of the subsurface safety devices and tubing plugs installed in the well or indicate that a departure has been granted.

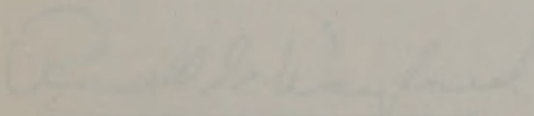
To establish a failure-reporting and corrective-action program as a basis for reliability and quality control, each operator shall submit a quarterly failure-analysis report to the office of the Supervisor, identifying mechanical failures by lease and well, make and model, cause or probable cause of failure, and action taken to correct the failure. The reporting period shall begin the first day of the month following the date of this

Order. The reports shall be submitted by February 28, May 31, August 31, and November 30 for the periods ending January 31, April 30, July 31, and October 31 of each year.


Robert F. Evans
Supervisor

Approved: June 5, 1972


Russell G. Wayland
Chief, Conservation Division



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS
LEASES IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

PROCEDURE FOR COMPLETION OF OIL AND GAS WELLS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.92. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. Wellhead Equipment and Testing Procedures.

- A. Wellhead Equipment. All completed wells shall be equipped with casingheads, wellhead fittings, valves and connections with a rated working pressure equal to or greater than the surface shut-in pressure of the well. Connections and valves shall be designed and installed to permit fluid to be pumped between any two strings of casing. Two master valves shall be installed on the tubing in wells with a surface pressure in excess of five thousand pounds per square inch. All wellhead connections shall be assembled and tested, prior to installation, by a fluid pressure which shall be equal to the rated test pressure of the fitting to be installed.
- B. Testing Procedure. Any wells showing sustained pressure on the casinghead, or leaking gas or oil between the production casing and the next larger casing string, shall be tested in the following manner: The well shall be killed with water or mud and pump pressure applied. Should the pressure at the casinghead reflect the applied pressure, the casing shall be condemned. After corrective measures have been taken, the casing shall be tested in the same manner. This testing procedure shall be used when the origin of the pressure cannot be determined otherwise.

2. Storm Choke. All completed wells shall meet the requirements prescribed in OCS Order No. 5.

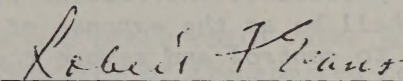
3. Procedures for Multiple or Tubingless Completions.

A. Multiple Completions.

- (1) Information shall be submitted on, or attached to, Form 9-331 showing top and bottom of all zones proposed for completion or alternate completion, including a partial electric log and a diagrammatic sketch showing such zones and equipment to be used.
- (2) When zones approved for multiple completion become intercommunicated the lessee shall immediately repair and separate the zones after approval is obtained.

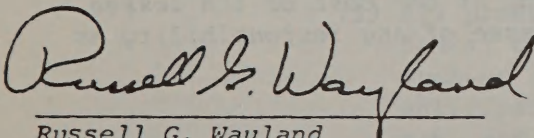
B. Tubingless Completions.

- (1) All tubing strings in a multiple completed well shall be run to the same depth below the deepest producible zone.
- (2) The tubing string(s) shall be new pipe and cemented with a sufficient volume to extend a minimum of 500 feet above the uppermost producible zone.
- (3) A temperature or cement bond log shall be run in all tubingless completion wells where lost circulation or other unusual circumstances occur during the cementing operations.
- (4) Information shall be submitted on, or attached to, Form 9-331 showing the top and bottom of all zones proposed for completion or alternate completion, including a partial electric log and a diagrammatic sketch showing such zones and equipment to be used.



Robert F. Evans
Supervisor

Approved: August 28, 1969



Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL LEASES
IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

POLLUTION AND WASTE DISPOSAL

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.43. Section 250.43 provides as follows:

- (a) The lessee shall not pollute land or water or damage the aquatic life of the sea or allow extraneous matter to enter and damage any mineral- or water-bearing formation. The lessee shall dispose of all liquid and non-liquid waste materials as prescribed by the supervisor. All spills or leakage of oil or waste materials shall be recorded by the lessee and, upon request of the supervisor, shall be reported to him. All spills or leakage of a substantial size or quantity, as defined by the supervisor, and those of any size or quantity which cannot be immediately controlled also shall be reported by the lessee without delay to the supervisor and to the Coast Guard and the Regional Director of the Federal Water Pollution Control Administration. All spills or leakage of oil or waste materials of a size or quantity specified by the designee under the pollution contingency plan shall also be reported by the lessee without delay to such designee.
- (b) If the waters of the sea are polluted by the drilling or production operations conducted by or on behalf of the lessee, and such pollution damages or threatens to damage aquatic life, wildlife, or public or private property, the control and total removal of the pollutant, wheresoever found, proximately resulting therefrom shall be at the expense of the lessee. Upon failure of the lessee to control and remove the pollutant the supervisor, in cooperation with other appropriate agencies of the Federal, State and local governments, or in cooperation with the lessee, or both, shall have the right to accomplish the control and removal of the pollutant in accordance with any established contingency plan for combating oil spills or by other means at the cost of the lessee. Such action shall not relieve the lessee of any responsibility as provided herein.

- (c) The lessee's liability to third parties, other than for cleaning up the pollutant in accordance with subsection (b) above, shall be governed by applicable law.

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. Pollution Prevention. In the conduct of all oil, gas and sulphur operations, the operator shall prevent pollution of the waters of the Gulf of Mexico. The operator shall comply with the following pollution prevention requirements:

A. Liquid Disposal.

- (1) Oil in any form shall not be disposed of into the waters of the Gulf.
- (2) Liquid waste materials containing substances which may be harmful to aquatic life or wildlife, or injurious in any manner to life or property, shall be treated to avoid disposal of harmful substances into the waters of the Gulf.
- (3) Drilling mud containing oil shall not be disposed of into the Gulf. Drilling mud containing toxic substances shall be neutralized prior to disposal.

B. Solid Waste Disposal.

- (1) Drill cuttings, sand, and other solids containing oil shall not be disposed of into the Gulf unless the oil has been removed.
- (2) Mud containers and other solid waste materials shall be incinerated or transported to shore for disposal.

C. Production Facilities.

- (1) All production facilities, such as separators, tanks, treaters, and other equipment, shall be such as are necessary to control the maximum anticipated pressures and production of oil, gas, and sulphur, and shall be maintained at all times in a manner necessary to prevent pollution.

- (2) All platforms and structures shall be curbed and connected by drains to a collecting tank or sump unless drip pans, or equivalents, are placed under equipment, from which a pollutant may spill into the Gulf, and piped to a tank or sump.
- (3) The operator's personnel shall be thoroughly instructed in the techniques of equipment maintenance and operation for the prevention of pollution. Non-operator personnel shall be informed in writing, prior to executing contracts, of the operator's obligations to prevent pollution.

2. Inspections and Reports. The operator shall comply with the following pollution inspection and reporting requirements:

A. Pollution Inspections.

- (1) Manned facilities shall be inspected daily.
- (2) Unattended facilities, including those equipped with remote control and monitoring systems, shall be inspected at frequent intervals. The district engineer may prescribe the frequency of inspections for these facilities.

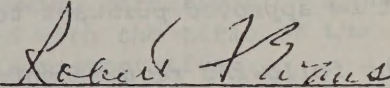
B. Pollution Reports.

- (1) All spills or leakage of oil and liquid pollutants shall be recorded showing the cause, size of spill, and action taken, and the record shall be maintained and available for inspection by the supervisor. All spills or leakage of less than 15 barrels shall be reported to the district engineer when requested by him.
- (2) All spills or leakage of oil and liquid pollutants of 15 to 50 barrels shall be reported orally to the district engineer without delay and shall be confirmed in writing.
- (3) All spills or leakage of oil and liquid pollutants of a substantial size or quantity, which is defined as more than 50 barrels, and those of any size or quantity which cannot be immediately controlled, shall be reported orally without delay to the supervisor, the district engineer, the Coast Guard, and the Regional Director, Federal Water Pollution Control Administration. All oral reports shall be confirmed in writing.

- (4) Operators shall notify each other upon observation of equipment malfunction or pollution resulting from another's operation.

3. Control and Removal.

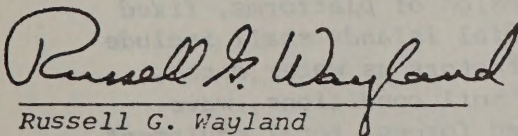
- A. Corrective Action. Immediate corrective action shall be taken in all cases where pollution has occurred. Each operator shall have an emergency plan for initiating corrective action to control and remove pollution and such plan shall be filed with the supervisor. Corrective action taken under the plan shall be subject to modification when directed by the supervisor.
- B. Equipment. Standby pollution control equipment shall be maintained by or shall be immediately available to each operator at a land base location. This equipment shall include containment booms, skimming apparatus, and approved chemical dispersants and shall be available prior to the commencement of operations. The equipment shall be regularly inspected and maintained in good condition for use. The equipment and the location of land bases shall be approved by the supervisor. The operator shall notify the supervisor of the location at which such equipment is located for operations conducted on or for each lease. All changes in location and equipment maintained at each location shall be approved by the supervisor.



Robert F. Evans

Supervisor

Approved: August 28, 1969



Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL LEASES IN THE
OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

APPROVAL PROCEDURE FOR INSTALLATION AND OPERATION OF PLATFORMS,
FIXED AND MOBILE STRUCTURES, AND ARTIFICIAL ISLANDS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.19(a). Section 250.19(a) provides as follows:

- (a) The Supervisor is authorized to approve the design, other features, and plan of installation of all platforms, fixed structures, and artificial islands as a condition of the granting of a right of use or easement under Paragraphs (a) and (b) of Section 250.18 or authorized under any lease issued or maintained under the Act.

The operator shall be responsible for compliance with the requirements of this Order in the installation and operation of all platforms, fixed and mobile structures, and artificial islands, including all facilities installed on a platform or structure whether or not operated or owned by the operator. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. The following requirements are applicable to all platforms approved and installed subsequent to the effective date of this Order, and to all platforms when structural and equipment modifications are to be made:

- A. General Design. The design of platforms, fixed structures, and artificial islands shall include consideration of such factors as water depth, surface and subsurface soil conditions, wave and current forces, wind forces, total equipment weight, and other pertinent geological, geographical, environmental, and operational conditions.

B. Application. The operator shall submit, in duplicate, the following to the appropriate District Office for approval:

(1) Design Features. Information relative to design features on an 8" x 10½" plat or plats showing the platform dimensions, plan and two elevations, number and location of well slots, and water depth. In addition, the plat shall include:

- (a) Nominal size and thickness range of piling.
- (b) Nominal size and thickness range of jacket column leg.
- (c) Nominal size and thickness range of deck column leg.
- (d) Design piling penetration.
- (e) Maximum bearing and lateral load per pile in tons.
- (f) Identification data which shall be the lease number, block number, area, and operator.
- (g) The following certification signed and dated with the title of the company representative:

" Operator certifies that this platform has been certified by a registered professional engineer and that the structure will be constructed, operated, and maintained as described in the application, and any approved modification thereto. Certified plans are on file at _____."

(2) Non-design Features. Information relative to non-design features including the following:

- (a) Primary use intended, including drilling, production of oil and gas, sulphur, or salt.

(b) Personnel and personnel transfer facilities including living quarters, boat landings, and heliport.

(c) Type of deck, such as steel or wood, and whether coated with protective material.

(d) Method of protection from corrosion.

(e) Production facilities including separators, treaters, storage tanks, compressors, line pumps, and metering devices, except that when initially designed and utilized for drilling, this information may be submitted prior to installation.

(f) Safety and pollution control equipment and features.

(g) Other information when required.

C. Certified Plan. Detailed structural plans certified by a registered professional engineer shall be on file and maintained by the operator or his designee.

2. Safety and Pollution Control Equipment and Procedures.

A. The following requirements shall apply to all platforms. Operators of platforms installed prior to the effective date of this Order shall comply with the requirements of subparagraphs (1)(a) through (f), (2), and (3) within three months, with subparagraphs (1)(g) and (4) within six months, and with subparagraphs (5), (6), (7), (8), and (9) within one year, from the effective date of this Order.

(1) The following shut-in devices shall be installed and maintained in an operating condition on all pressurized vessels and water separation facilities when such vessels and separation facilities are in service. The operator shall submit records to the appropriate District Office semi-annually showing the present status and past history of each device including dates and details of inspection, testing, repairing, adjustment, and reinstallation.

- (a) All separators shall be equipped with high-low pressure shut-in sensors, low level shut-in controls, and a relief valve. High liquid level control devices shall be installed when the vessel can discharge to a flare.
- (b) All pressure surge tanks shall be equipped with a high and low pressure shut-in sensor, a high level shut-in control, flare line, and relief valve.
- (c) Atmospheric surge tanks shall be equipped with a high level shut-in sensor.
- (d) All other hydrocarbon handling pressure vessels shall be equipped with high-low pressure shut-in sensors, high-low level shut-in controls, and relief valves, unless determined to be otherwise protected.
- (e) Pilot-operated pressure relief valves shall be equipped to permit testing with an external pressure source. Spring-loaded pressure relief valves shall either be bench-tested or equipped to permit testing with an external pressure source. A relief valve shall be set no higher than the designed working pressure of the vessel. The high pressure shut-in sensor shall be set no higher than 5% below the rated or designed working pressure and the low pressure shut-in sensor shall be set no lower than 10% below the lowest pressure in the operating pressure range on all vessels with a rated or designed working pressure of more than 400 psi. On lower pressure vessels the above percentages shall be used as guidelines for sensor settings considering pressure and operating conditions involved; except that sensor settings shall not be within 5 psi of the rated or designed working pressure or the lowest pressure in the operating pressure range.
- (f) All sensors shall be equipped to permit testing with an external pressure source.
- (g) All flare lines shall be equipped with a scrubber or similar separation equipment.

(2) The following remote and local automatic shut-in devices shall be installed and maintained in an operating condition at all times when the affected well (or wells) is producing. The operator shall submit records to the appropriate District Office semi-annually showing the present status and past history of each such device including dates and details of inspection, testing, repairing, adjustment, and reinstallation.

(a) All wellhead assemblies shall be equipped with an automatic fail-close valve. Automatic safety valves temporarily out of service shall be flagged.

(b) All flowlines from wellheads shall be equipped with high-low pressure sensors located close to the wellhead. The pressure sensors shall be set to activate the wellhead valve in the event of abnormal pressures in the flowline.

(c) All headers shall be equipped with check valves on the individual flowlines. The flowline and valves from each well located upstream of, and including, the header valves shall withstand the shut-in pressure of that well, unless protected by a relief valve with connections to bypass the header. If there is an inlet valve to a separator, the valve, flowline, and all equipment upstream of the valve shall also withstand shut-in wellhead pressure, unless protected by a relief valve with connections to bypass the header.

(d) All pneumatic shut-in control lines shall be equipped with fusible material at strategic points.

(e) Remote shut-in controls shall be located on the helicopter deck and all exit stairway landings, including at least one on each boat landing. These controls shall be quick-opening valves.

- (f) All pressure sensors shall be tested for proper pressure settings monthly for at least four months. At such time as the monthly results are consistent, a quarterly test shall be required for at least one year. If these results are consistent, a longer period of time between testing may then be approved by the Supervisor. In the event any testing sequence reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained in the field.
- (g) All automatic wellhead safety valves shall be tested for operation weekly. All automatic wellhead safety valves shall be tested for holding pressure monthly. If these results are consistent, a longer period of time between pressure tests, not to exceed quarterly, may then be approved by the Supervisor. In the event that any pressure testing sequence, exceeding monthly, reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained in the field.
- (h) Check valves shall be tested for holding pressure monthly for at least four months. At such time as the monthly results are satisfactory, a quarterly test shall be required for at least one year. If these results are consistent, a longer period of time between testing may then be approved by the Supervisor. In the event any testing sequence reveals inconsistent results, the monthly testing sequence shall be reinstituted. Results of all tests shall be recorded and maintained in the field.
- (i) A complete testing and inspection of the safety system shall be witnessed by Geological Survey representatives at the time production is commenced. Thereafter, the operator shall arrange for a test every six months. The test shall be conducted when it can be witnessed by Geological Survey representatives.

- (j) A standard procedure for testing of safety equipment shall be prepared and posted in a prominent place on the platform.
- (3) Curbs, gutters, and drains shall be constructed in all deck areas in a manner necessary to collect all contaminants, unless drip pans or equivalent are placed under equipment and piped to a sump which will automatically maintain the oil at a level sufficient to prevent discharge of oil into the Gulf waters. Alternate methods to obtain the same results will be acceptable. These systems shall not permit spilled oil to flow into the wellhead area.
- (4) An auxiliary electrical power supply shall be installed to provide emergency power capable of operating all electrical equipment required to maintain safety of operation in the event the primary electrical power supply fails.
- (5) The following requirements shall apply to the handling and disposal of all produced waste water discharged into the Gulf of Mexico. The disposal of waste water other than into the Gulf waters shall have the method and location approved by the Supervisor.
- (a) Water discharged shall not create conditions which will adversely affect the public health or the use of the waters for the propagation of aquatic life, recreation, navigation, or other legitimate uses.
- (b) Waste water disposal systems shall be designed and maintained to reduce the oil content of the disposed water to an average of not more than fifty ppm. An effluent sampling station shall be located at a point prior to discharge into the receiving waters where a representative sample of the treated effluent can be obtained. On one day each month four effluent samples shall be taken within a 24-hour period and determinations shall be made on the temperature, suspended solids, settleable solids, pH, total oil content, and volume of sample obtained.

All samples shall be taken and all analyses for oil content shall be performed in accordance with the American Society for Testing and Materials test D1340, "Oily Matter in Industrial Waste Water". The Supervisor may approve different methods for determination of oil content if the method to be used is indicated to be reliable. No effluent containing in excess of one hundred ppm of total oil content shall be discharged into the Gulf of Mexico. A written report of the results shall be furnished to the Regional Office annually. The report shall contain dates, time and location of sample, volumes of waste discharge on the date of sampling in barrels per day, and the results of the specific analysis and physical observations.

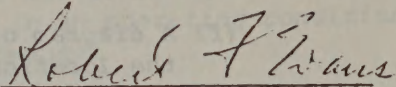
(6) A firefighting system shall be installed and maintained in an operating condition in accordance with the following:

- (a) A fixed automatic water spray system shall be installed in all inadequately ventilated well-head areas as these areas are defined in Paragraph 9 API RP 500A. These systems shall be installed in accordance with the most current edition of National Fire Protection Association's Pamphlet No. 15.
- (b) A firewater system of rigid pipe with fire hose stations shall be installed and may include a fixed water spray system. Such a system shall be installed in a manner necessary to provide needed protection in areas where production handling equipment is located. A firefighting system using chemicals may be considered for installation in certain platform areas in lieu of a firewater system in that area, if determined to provide equivalent fire protection control.
- (c) Pumps for the firewater systems shall be inspected and test-operated weekly. A record of the tests shall be maintained in the field and submitted semi-annually to the appropriate District Office. An alternate fuel or power source shall be installed to provide continued pump operation during platform shutdown unless an alternate firefighting system is provided.

- (d) Portable fire extinguishers shall be located in the living quarters and in other strategic areas.
 - (e) A diagram of the firefighting system showing the location of all equipment shall be posted in a prominent place on the platform and a copy submitted to the appropriate District Office.
- (7) An automatic gas detector and alarm system shall be installed and maintained in an operating condition in accordance with the following:
- (a) Gas detection systems shall be installed in all enclosed areas containing gas handling facilities or equipment and in other enclosed areas which are classified as hazardous areas as defined in API RP 500 and the most current edition of the National Electric Code.
 - (b) All gas detection systems shall be capable of continuously monitoring for the presence of combustible gas in the areas in which the detection devices are located.
 - (c) The central control shall be capable of giving an alarm at some point below the lower explosive limit of 1.3% as shown in the Bureau of Mines Bulletin No. 503. This low level shall be for alarm purposes only.
 - (d) A high level setting of not more than 4.9% shall be used for shut-in sequences and the operation of emergency equipment.
 - (e) An application for the installation and maintenance of any gas detection system shall be filed with the appropriate District Office for approval. The application shall include the following:
 - (i) Type, location, and number of detection or sampling heads.
 - (ii) Cycling, noncycling, and frequency information.
 - (iii) Type and kind of alarm including emergency equipment to be activated.

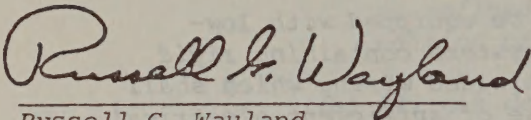
- (iv) Method used for detection of combustible gas.
 - (v) Method and frequency of calibration.
 - (vi) A diagram of the gas detection system.
 - (vii) Other pertinent information.
 - (f) A diagram of the gas detection system showing the location of all gas detection points shall be posted in a prominent place on the platform.
- (8) The following requirements shall be applicable to all electrical equipment and systems installed:
- (a) All engines shall be equipped with low-tension ignition systems containing rigid connections and shielded wiring which shall prevent the release of sufficient electrical energy under normal or abnormal conditions to cause ignition of a combustible mixture.
 - (b) All electrical generators, motors, and lighting systems shall be installed, protected, and maintained in accordance with the most current edition of the National Electric Code and API RP 500A and B, as appropriate.
 - (c) Marine-armored cable or metal-clad cable may be substituted for wire in conduit in any area.
- (9) Sewage disposal systems shall be installed and used in all cases where sewage is discharged into the Gulf of Mexico. Sewage is defined as human body wastes and the wastes from toilets and other receptacles intended to receive or retain body wastes. Following sewage treatment, the effluent shall contain 50 ppm or less of biochemical oxygen demand (BOD), 150 ppm or less of suspended solids, and shall have a minimum chlorine residual of 1.0 mg/liter after a minimum retention time of fifteen minutes.

B. The requirements of subparagraphs 2.A(3), (4), (8), and (9) shall apply to all mobile drilling structures used to conduct drilling or workover operations on Federal leases in the Gulf of Mexico.



Robert F. Evans
Supervisor

Approved: October 30, 1970



Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS LEASES
IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

APPROVAL PROCEDURE FOR OIL AND GAS PIPELINES

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.19(b). Section 250.19(b) provides as follows:

- (b) The Supervisor is authorized to approve the design, other features, and plan of installation of all pipelines for which a right of use or easement has been granted under Paragraph (c) of Section 250.18 or authorized under any lease issued or maintained under the Act, including those portions of such lines which extend onto or traverse areas other than the Outer Continental Shelf.

The operator shall comply with the following requirements. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. General Design. All pipelines shall be designed and maintained in accordance with the following:

- A. The operator shall be responsible for the installation of the following control devices on all oil and gas pipelines connected to a platform including pipelines which are not operated or owned by the operator. Operators of platforms installed prior to the effective date of this Order shall comply with the requirements of subparagraphs (1) and (2) within six months of the effective date of this Order. The operator shall submit records semi-annually showing the present status and past history of each device, including dates and details of inspection, testing, repairing, adjustment, and reinstallation.

- (1) All oil and gas pipelines leaving a platform receiving production from the platform shall be equipped with a high-low pressure sensor to directly or indirectly shut-in the wells on the platform.

(2) (a) All oil and gas pipelines delivering production to production facilities on a platform shall be equipped with an automatic shut-in valve connected to the platform's automatic and remote shut-in system.

(b) All oil and gas pipelines coming onto a platform shall be equipped with a check valve to avoid backflow.

(c) Any oil or gas pipelines crossing a platform which do not deliver production to the platform, but which may or may not receive production from the platform, shall be equipped with high-low pressure sensors to activate an automatic shut-in valve to be located in the upstream portion of the pipeline at the platform. This automatic shut-in valve shall be connected to either the platform automatic and remote shut-in system or to an independent remote shut-in system.

(d) All pipeline pumps shall be equipped with high-low pressure shut-in devices.

B. All pipelines shall be protected from loss of metal by corrosion that would endanger the strength and safety of the lines either by providing extra metal for corrosion allowance, or by some means of preventing loss of metal such as protective coatings or cathodic protection.

C. All pipelines shall be installed and maintained to be compatible with trawling operations and other uses.

D. All pipelines shall be hydrostatically tested to 1.25 times the designed working pressure for a minimum of 2 hours prior to placing the line in service.

E. All pipelines shall be maintained in good operating condition at all times and inspected monthly for indication of leakage using aircraft, floating equipment, or other methods. Records of these inspections including the date, methods, and results of each inspection shall be maintained by the pipeline operator and submitted annually by April 1. The pipeline operator shall submit records indicating the cause, effect, and remedial action taken regarding all pipeline leaks within one week following each such occurrence.

F. All pipelines shall be designed to be protected against water currents, storm scouring, soft bottoms, and other environmental factors.

2. Application. The operator shall submit in duplicate the following to the Supervisor for approval:

- A. Drawing on 8" x 10½" plat or plats showing the major features and other pertinent data including: (1) water depth, (2) route, (3) location, (4) length, (5) connecting facilities, (6) size, and (7) burial depth, if buried.
- B. A schematic drawing showing the following pipeline safety equipment and the manner in which the equipment functions: (1) high-low pressure sensors, (2) automatic shut-in valves, and (3) check valves.
- C. General information concerning the pipeline including the following:
 - (1) Product or products to be transported by the pipeline.
 - (2) Size, weight, and grade of the pipe.
 - (3) Length of line.
 - (4) Maximum water depth.
 - (5) Type or types of corrosion protection.
 - (6) Description of protective coating.
 - (7) Bulk specific gravity of line (with the line empty).
 - (8) Anticipated gravity or density of the product or products.
 - (9) Design working pressure and capacity.
 - (10) Maximum working pressure and capacity.
 - (11) Hydrostatic pressure and hold time to which the line will be tested after installation.
 - (12) Size and location of pumps and prime movers.
 - (13) Any other pertinent information as the Supervisor may prescribe.

3. Completion Report. The operator shall notify the Supervisor when installation of the pipeline is completed and submit a drawing on 8" x 10½" plats showing the location of the line as installed, accompanied by all hydrostatic test data including procedure, test pressure, hold time, and results.

Robert F. Evans
Robert F. Evans
Supervisor

Approved: October 30, 1970

Russell G. Wayland
Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL SULPHUR LEASES
IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

SULPHUR DRILLING PROCEDURES OFF LOUISIANA AND TEXAS

This Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.34, 250.41, and 250.91. All exploratory core holes for sulphur and all sulphur development wells shall be drilled in accordance with the provisions of this Order, except that development wells shall be drilled in accordance with field rules when established by the supervisor. Each Application to Drill (Form 9-331C) shall include all information required under 30 CFR 250.91 and the integrated casing, cementing, mud, and blowout prevention program for the well. The operator shall comply with the following requirements. Any departures from the requirements specified in this Order must be approved pursuant to 30 CFR 250.12(b).

1. Well Casing and Cementing. All wells shall be cased and cemented in accordance with the requirements of 30 CFR 250.41(a)(1). Special consideration to casing design shall be given to compensate for effects caused by subsidence, corrosion, and temperature variation. All depths refer to true vertical depth (TVD).

- A. Drive or Structural Casing. This casing shall be set by drilling, driving, or jetting to a minimum depth of 100 feet below the Gulf floor, or to such greater depth required to support unconsolidated deposits and to provide hole stability for initial drilling operations. If drilled in, the drilling fluid shall be a type that will not pollute the Gulf, and a quantity of cement sufficient to fill the annular space back to the Gulf floor must be used.

- B. Conductor Casing. This casing shall be set and cemented before drilling into shallow formations known to contain hydrocarbons or, if unknown, upon encountering such formations. Conductor casing shall extend to a depth of not less than 350 feet nor more than 750 feet below the Gulf floor. A quantity of cement sufficient to fill

the annular space back to the Gulf floor must be used. The cement may be washed out or displaced to a depth of 40 feet below the Gulf floor to facilitate casing removal upon well abandonment.

- C. Caprock Casing. This casing shall be set at the top of the caprock and be cemented with a quantity of cement sufficient to fill the annular space back to the Gulf floor. Stage cementing or other cementing method shall be used to insure cement returns to the Gulf floor.
2. Blowout Prevention Equipment. Blowout preventers and related well control equipment shall be installed, used, and tested in a manner necessary to prevent blowouts. Prior to drilling below the conductor casing, blowout prevention equipment shall be installed and maintained ready for use until drilling operations are completed, as follows:
- A. Conductor Casing. Before drilling below this string, at least one remotely controlled bag-type blowout preventer and equipment for circulating the drilling fluid to the drilling structure or vessel shall be installed. To avoid formation fracturing from complete shut-in of the well, a large diameter pipe with control valves shall be installed on the conductor casing below the blowout preventer so as to permit the diversion of hydrocarbons and other fluids; except that when the blowout preventer assembly is on the Gulf floor, the choke and kill lines shall be equipped to permit the diversion of hydrocarbons and other fluids.
 - B. Caprock Casing. Before drilling below this string, the blowout prevention equipment shall include a minimum of: (1) three remotely controlled, hydraulically operated, blowout preventers with a working pressure which exceeds the maximum anticipated surface pressure, including one equipped with pipe rams, one with blind rams, and one bag-type; (2) a drilling spool with side outlets, if side outlets are not provided in the blowout preventer body; (3) a choke manifold; (4) a kill line; and (5) a fill-up line.

- C. Testing. Ram-type blowout preventers and related control equipment shall be tested with water to the rated working pressure of the stack assembly, or to the working pressure of the casing, whichever is the lesser, (1) when installed; (2) before drilling out after each string of casing is set; (3) not less than once each week while drilling; and (4) following repairs that require disconnecting a pressure seal in the assembly. The bag-type blowout preventer shall be tested to 70 percent of the above pressure requirements.

While drill pipe is in use ram-type blowout preventers shall be actuated to test proper functioning once each day. The bag-type blowout preventer shall be actuated on the drill pipe once each week. Accumulators or accumulators and pumps shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. A blowout prevention drill shall be conducted weekly for each drilling crew to insure that all equipment is operational and that crews are properly trained to carry out emergency duties. All blowout preventer tests and crew drills shall be recorded on the driller's log.

- D. Other Equipment. A drill string safety valve in the open position shall be maintained on the rig floor at all times while drilling operations are being conducted. Separate valves shall be maintained on the rig floor to fit all pipe in the drill string. A Kelly cock shall be installed below the swivel.

- 3) Mud Program - General. The characteristics, use, and testing of drilling mud and the conduct of related drilling procedures shall be such as are necessary to prevent the blowout of any well. Quantities of mud materials sufficient to insure well control shall be maintained readily accessible for use at all times. The following mud control and testing equipment requirements are applicable to operations conducted prior to drilling below the caprock casing.

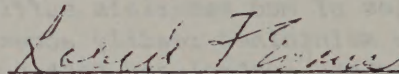
- A. Mud Control. Before starting out of the hole with drill pipe, the mud shall be circulated with the drill pipe just off bottom until the mud is properly conditioned. When coming out of the hole with drill pipe, the annulus shall be filled with mud before the mud level drops below 100 feet, and a mechanical device for measuring the amount of mud required to fill the hole shall be utilized. The volume of mud required to fill the hole shall be watched,

and any time there is an indication of swabbing, or influx of formation fluids, the drill pipe shall be run to bottom, and the mud properly conditioned. The mud shall not be circulated and conditioned except on or near bottom, unless well conditions prevent running the pipe to bottom.

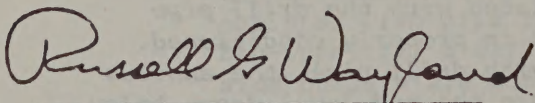
- B. Mud Testing and Equipment. Mud testing equipment shall be maintained on the drilling platform at all times, and mud tests shall be performed daily, or more frequently as conditions warrant.

The following mud system monitoring equipment must be installed (with derrick floor indicators) and used throughout the period of drilling after setting and cementing the conductor casing:

- (1) Recording mud pit level indicator to determine mud pit volume gains and losses. This indicator shall include a visual or audio warning device.
- (2) Mud volume measuring device for accurately determining mud volumes required to fill the hole on trips.
- (3) Mud return indicator to determine that returns essentially equal the pump discharge rate.


Robert F. Evans
Supervisor

Approved: August 28, 1969


Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS LEASES
IN THE OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

INTERIM OIL AND GAS PRODUCTION RATES

This Interim Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.16 and supersedes Interim OCS Order No. 11, dated December 11, 1970, and the first and second revisions thereof, dated February 11, 1971, and March 29, 1971, respectively. The provisions of this Interim Order and the maximum production rates heretofore approved under Interim Order No. 11, dated December 11, 1970, will remain in full force and effect until superseded, amended, or terminated. 30 CFR 250.16 provides as follows:

Well potentials and permissible flow. The supervisor is authorized to specify the time and method for determining the potential capacity of any well and to fix, after appropriate notice, the permissible production of any such well that may be produced when such action is necessary to prevent waste or to conform with such proration rules, schedules, or procedures as may be established by the Secretary.

In accordance with the notice appearing in the Federal Register, dated December 5, 1970 (35 F.R. 18559), the provisions of this Order are applicable to all oil and gas wells located on the Outer Continental Shelf of the Gulf of Mexico off the State of Texas and the undisputed areas off the State of Louisiana; provided, however, this order shall not apply to any wells on oil and gas leases situated landward of the line, or transected by the line, described in paragraph 3 of the Supplemental Decree entered December 20, 1971, in United States v. Louisiana, S. Ct. No. 9, Original (40 L.W. 3287). Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12 (b).

1. Maximum Production Rates.

- A. Producible Wells. Effective May 1, 1972, all producible oil and gas wells and reservoirs may be produced at daily rates not to exceed the Maximum Efficient Rate (MER), subject to the limitations set forth in paragraph 5 below.
- B. New Completions and Recompletions. New oil and gas well completions and recompletions shall be produced at a rate established by the Supervisor. A testing period not to exceed 30 days will be allowed prior to setting the maximum production rate for the well. At the end of the testing period, the operator shall submit a detailed determination of the MER justifying a proposed maximum rate of production for the Supervisor's approval. The initial production test of all completions and recompletions may be witnessed by a representative of the Supervisor.

2. Definition of MER. The MER is defined as that rate for each reservoir and each well which, if exceeded, would lead to avoidable underground waste through loss of ultimate recovery of oil and gas from that reservoir. It is dependent on the recovery mechanism operative for the current producing period, and is based on engineering and geological information.

3. Determination of MER. On or before May 1, 1972, each operator shall submit reports, for approval by the Supervisor, showing the operator's estimate of the MER for each oil and gas well and reservoir on those leases in the area removed from dispute in United States v. Louisiana, S. Ct. No. 9, Original, by entry of the Supplemental Decree of December 20, 1971, in that litigation (40 L.W. 3287). Reports shall be identified by the name of the field, the OCS lease number, the well number, and the designation and depth of the productive zone. As soon as available and prior to July 1, 1972, each operator shall submit the technical information and methods used to determine the MER applicable to each well and reservoir.

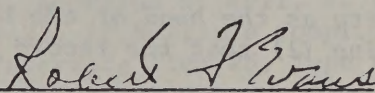
Revisions in the operator's estimate of the MER for oil and gas wells and reservoirs located on leases subject to this Interim Order shall be submitted to the Supervisor for approval.

4. Reports. Each operator shall submit the following reports for each lease separately to the Regional Office. Initial reports for those leases in the area removed from dispute, referred to in Paragraph 3 above, shall be for the month of April 1972 for the reports required in A, C, and D, below, and for the quarter ending April 1, 1972, for the report required in B below.

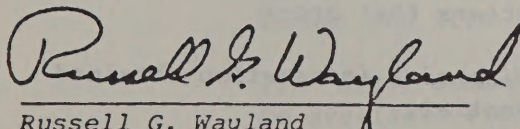
- A. A monthly well potential report on a form identical to the Louisiana Department of Conservation Form DM-1R. This report shall be submitted for each month by the 10th day of each succeeding month.
- B. A gas well deliverability test report on a form identical to the Louisiana Department of Conservation Form DT-1, shall be submitted by January 1, April 1, July 1, and October 1.
- C. A monthly producer's crude oil and/or condensate report on a form identical to Louisiana Department of Conservation Form R-1. This report shall be submitted for each month by the 25th day of each succeeding month.
- D. A monthly producer's natural gas report on a form identical to Louisiana Department of Conservation Form R-5P. This report shall be submitted for each month by the last day of each succeeding month.

5. Limitations on Production.

- A. Production rates shall not result in venting or flaring of gas in violation of the Operating Regulations in 30 CFR 250.30.
- B. In order to provide safe operating conditions and prevent pollution, oil and gas production rates shall not exceed the operating capacity of production, transportation, and storage facilities, including, but not limited to, separators, dehydrators, compressors, surge tanks, and pipelines. All producing operations shall be in accordance with the provisions of OCS Orders Nos. 5, 7, 8 and 9. Production rates shall be maintained at a level to permit efficient operation of subsurface safety devices.


Robert F. Evans
Supervisor

Approved:


Russell G. Wayland
Chief, Conservation Division

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF OF MEXICO AREA

NOTICE TO LESSEES AND OPERATORS OF FEDERAL LEASES IN THE
OUTER CONTINENTAL SHELF, GULF OF MEXICO AREA

PUBLIC INSPECTION OF RECORDS

This Interim Order is established pursuant to the authority prescribed in 30 CFR 250.11 and in accordance with 30 CFR 250.97¹ and 43 CFR 2.2. Section 250.97 of 30 CFR provides as follows:

Public Inspection of Records. Geological and geophysical interpretations, maps, and data required to be submitted under this part shall not be available for public inspection without the consent of the lessee so long as the lease remains in effect or until such time as the supervisor determines that release of such information is required and necessary for the proper development of the field or area.

Section 2.2 of 43 CFR provides in part as follows:

Determinations as to Availability of Records. (a) Section 552 of Title 5, U.S. Code, as amended by Public Law 90-23 (the act codifying the "Public Information Act") requires that identifiable agency records be made available for inspection. Subsection (b)¹ of section 552 exempts several categories of records from the general requirement but does not require the withholding from inspection of all records which may fall within the categories exempted. Accordingly, no request made of a field office to inspect a record shall be denied unless the head of the office or such higher field authority as the head of the bureau may designate shall determine (1) that the record falls within one or more of

¹ Subsection (b) of section 552 provides that:

(b) This section does not apply to matters that are--

(4) Trade secrets and commercial or financial information obtained from a person and privileged or confidential;

(9) Geological and geophysical information and data, including maps, concerning wells.

the categories exempted and (2) either that disclosure is prohibited by statute or Executive Order or that sound grounds exist which require the invocation of the exemption. A request to inspect a record located in the headquarters office or a bureau shall not be denied except on the basis of a similar determination made by the head of the bureau or his designee, and a request made to inspect a record located in a major organizational unit of the Office of the Secretary shall not be denied except on the basis of a similar determination by the head of that unit. Officers and employees of the Department shall be guided by the "Attorney General's Memorandum on the Public Information Section of the Administrative Procedure Act" of June 1967.

(b) An applicant may appeal from a determination that a record is not available for inspection to the Solicitor of the Department of the Interior, who may exercise all of the authority of the Secretary of the Interior in this regard. The Deputy Solicitor may decide such appeals and may exercise all of the authority of the Secretary in this regard.

The operator shall comply with the requirements of this Order. Any departures from the requirements specified in this Order shall be subject to approval pursuant to 30 CFR 250.12(b).

1. Availability of Records Filed on or after December 1, 1970. It has been determined that certain records pertaining to leases and wells in the Outer Continental Shelf and submitted under 30 CFR 250 shall be made available for public inspection, as specified below, in the Area office, Metairie, Louisiana.

- A. Form 9-152 - Monthly Report of Operations. All information contained on this form shall be available except the information required in the Remarks column.
- B. Form 9-330 - Well Completion or Recompletion Report and Log.
 - (1) Prior to commencement of production all information contained on this form shall be available except Item 1a, Type of Well; Item 4, Location of Well, At top prod. interval reported below; Item 22, if Multiple Compl., How many; Item 24, Producing Interval; Item 26, Type Electric and Other Logs Run; Item 28, Casing Record; Item 29, Liner Record; Item 30, Tubing Record; Item 31, Perforation Record; Item 32, Acid, Shot, Fracture, Cement Squeeze, etc.; Item 33, Production; Item 37, Summary of Porous Zones; and Item 38, Geologic Markers.
 - (2) After commencement of production all information shall be available except Item 37, Summary of Porous Zones; and Item 38, Geologic Markers.

- (3) If production has not commenced after an elapsed time of five years from the date of filing Form 9-330 as required in 30 CFR 250.38(b), all information contained on this form shall be available except Item 37, Summary of Porous Zones; and Item 38, Geologic Markers. Within 90 days prior to the end of the five-year period the lessee or operator may submit objections to the release of such information. The supervisor, taking into consideration the objections of the lessee, proximity to unleased lands, and the best interests of the United States, may determine that such information shall not be released.

C. Form 9-331 - Sundry Notices and Report on Wells. (1) When used as a "Notice of Intention to" conduct operations, all information contained on this form shall be available except Item 4, Location of Well, At top prod. interval; and Item 17, Describe Proposed or Completed Operations.

(2) When used as a "Subsequent Report of" operations, and after commencement of production, all information contained on this form shall be available except information under Item 17 as to subsurface locations and measured and true vertical depths for all markers and zones not placed on production.

D. Form 9-331C - Application for Permit to Drill, Deepen or Plug Back. All information contained on this form, and location plat attached thereto, shall be available except Item 4, Location of Well, At proposed prod. zone; and Item 23, Proposed Casing and Cementing Program.

E. Sales of Lease Production. Information contained on monthly Geological Survey computer printout showing sales of production of oil, condensate, gas and liquid products, by lease, shall be made available.

2. Filing of Reports. All reports on Forms 9-152, 9-330, 9-331, and 9-331C shall be filed in accordance with the following:

A. All reports submitted on these forms after the effective date of this Order shall be filed in two separate sets. All items on the forms in one set shall be completed in full and such forms, and all attachments thereto, shall not be available for public inspection. The additional set shall be completed in full, except that the items described in 1.(A), (B), (C), and (D) above, and the attachments relating to such items, may be excluded. The words "Public Information" shall be shown on the lower right-hand corner of this set. This additional set shall be made available for public inspection.

B. Copies of reports on these forms which were filed between December 1, 1970, and the effective date of this Order, shall be resubmitted (in duplicate or triplicate, as provided by

the regulations) within 30 days after the effective date of this Order. These reports may exclude the items described in 1. (A), (B), (C), and (D) above, and shall show the words "Public Information" on the lower right-hand corner and shall be made available for public inspection.

3. Availability of Records Filed Prior to December 1, 1970.
Information filed prior to December 1, 1970, on the forms referred to in (1) above, is not in a form which can be readily made available for public inspection. Requests for information on these forms shall be submitted to the supervisor in writing and shall be made available in accordance with 43 CFR Part 2.

Robert F. Evans

Robert F. Evans
Supervisor

Approved: August 13, 1971

Russell G. Wayland

Russell G. Wayland
Chief, Conservation Division

ATTACHMENT B

PROPOSED SCHEDULE - PROVISIONAL OCS LEASING

SALES	1973					1974					1975					1976					1977					1978										
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
32 Miss., Ala., Fla.																																				
33 Louisiana																																				
34 Texas																																				
35 So. California																																				
36 La. & Texas																																				
37 La. & Texas																																				
38 Gulf of Mexico																																				
39 Gulf of Mexico																																				
40 Gulf of Mexico																																				
41 So. California																																				
42 Gulf of Mexico																																				
43 Alaska (Lower Cook Inlet)																																				
44 Gulf of Mexico																																				
45 Gulf of Mexico																																				
46 Alaska (Bering Sea Shelf)																																				



George L. Tward
 Director
 Bureau of Land Management

C=Call for nominations
 ND=Nominations Due
 T=Announcement of Tracts
 DES=Draft Environmental Statement
 PH=Public Hearing
 FES=Final Environmental Statement
 N=Notice of Sale

A decision whether to hold any of the lease sales listed will not be made until completion of all necessary studies of the environmental impact and the holding of public hearings; as a result of the environmental, technical, and economic studies employed in the decision-making process, a decision may, in fact, be made not to hold any sale on this schedule.

If CEQ's study of the environmental impact of oil and gas production on the Atlantic Outer Continental Shelf and in the Gulf of Alaska determines that development in these areas can proceed in an environmentally satisfactory manner, lease sales in one or both areas will be added to this proposed schedule at the earliest practicable time.

The holding of sale 43 is contingent upon the outcome of pending litigation with Alaska regarding jurisdiction over this area.

LIST OF BLOCKS REPORTED FOR LEASING IN WAFB 1912

OFFICIAL LEASING DIST. NO. 1
(Approved October 10, 1913)

WAFB 1912

Block No.	Block	Approx. Dimensions		Acres
		East (Feet)	North (Feet)	
1	100000000	15	70	3.45
2	100000001	15	70	3.45
3	100000002	15	70	3.45
4	100000003	15	70	3.45

OFFICIAL LEASING DIST. NO. 2
(Approved October 10, 1913; Amended February 15, 1913)

WAFB 1912

ATTACHMENT C

DESCRIPTION OF BLOCKS BY WATER DEPTH, DISTANCE FROM SHORE, ACREAGE

1	100000000	15	70	3.45
2	100000001	15	70	3.45
3	100000002	15	70	3.45
4	100000003	15	70	3.45
5	100000004	15	70	3.45
6	100000005	15	70	3.45
7	100000006	15	70	3.45
8	100000007	15	70	3.45
9	100000008	15	70	3.45
10	100000009	15	70	3.45
11	100000010	15	70	3.45
12	100000011	15	70	3.45
13	100000012	15	70	3.45
14	100000013	15	70	3.45
15	100000014	15	70	3.45
16	100000015	15	70	3.45
17	100000016	15	70	3.45
18	100000017	15	70	3.45
19	100000018	15	70	3.45
20	100000019	15	70	3.45
21	100000020	15	70	3.45
22	100000021	15	70	3.45
23	100000022	15	70	3.45
24	100000023	15	70	3.45
25	100000024	15	70	3.45
26	100000025	15	70	3.45
27	100000026	15	70	3.45
28	100000027	15	70	3.45
29	100000028	15	70	3.45
30	100000029	15	70	3.45

LIST OF TRACTS PROPOSED FOR LEASING IN MAFLA SALE

OFFICIAL LEASING MAP, MOBILE
(Approved October 10, 1972)

MOBILE AREA

<u>Tract No.</u>	<u>Block</u>	<u>Approx. Distance From Shore* (Statute Miles)</u>	<u>Approx. Water Depth (Feet)</u>	<u>Acreage</u>
1	16N688E073	15	70	5760
2	16N688E077	15	70	5760
3	16N688E078	16	70	5760
4	16N688E080	17	70	5760

OFFICIAL LEASING MAP, MOBILE SOUTH No. 1
(Approved October 10, 1972; Revised February 15, 1973)

MOBILE SOUTH No. 1 Area

5	16N666E069	19	600	5760
6	16N667E069	18	380	1552.86
7	16N667E070	20	320	5544.50
8	16N668E070	19	320	876.52
9	16N670E074	32	540	848.26
10	16N670E075	34	540	4455.95
11	16N673E088	62	490	1449.62
12	16N674E087	57	240	2531.43
13	16N674E088	57	245	4202.62
14	16N676E087	53	195	5760
15	16N676E088	52	200	5760
16	16N677E087	49	160	5760
17	16N677E088	50	165	5760
18	16N679E081	43	130	4538.04
19	16N679E082	43	140	5760
20	16N679E083	43	150	5760
21	16N679E088	44	130	5760
22	16N680E080	40	120	4156.82
23	16N680E081	41	125	5715.90
24	16N680E082	40	130	5760
25	16N680E088	40	125	5760
26	16N681E079	37	115	5004.4
27	16N681E080	38	115	5659.67
28	16N681E081	38	120	5760
29	16N681E082	37	125	5760

* Measured to the center of the tract.

MOBILE SOUTH No. 1 Area (cont')

<u>Tract No.</u>	<u>Block</u>	<u>Approx. Distance From Shore* (Statute Miles)</u>	<u>Approx. Water Depth (Feet)</u>	<u>Acreage</u>
30	16N682E079	34	110	5760
31	16N682E080	35	110	5760
32	16N682E081	35	115	5760
33	16N682E085	34	120	5760
34	16N682E086	34	120	5760
35	16N682E087	34	115	5760
36	16N683E085	31	110	5760
37	16N683E086	31	110	5760
38	16N683E087	31	110	5760
39	16N684E085	28	100	5760
40	16N684E086	28	105	5760
41	16N684E087	28	100	5760
42	16N685E074	20	75	5760
43	16N685E075	23	80	5760
44	16N686E073	16	70	5760
45	16N686E074	19	70	5760
46	16N686E075	19	75	5760
47	16N686E078	21	85	5760
48	16N686E079	22	85	5760
49	16N686E080	23	90	5760
50	16N687E072	14	65	5760
51	16N687E073	16	70	5760
52	16N687E074	19	70	5760
53	16N687E079	19	80	5760
54	16N687E080	19	80	5760

OFFICIAL LEASING MAP, PENSACOLA SOUTH No. 1
(Approved October 10, 1972)

PENSACOLA SOUTH No. 1 AREA

55	16N673E089	61	330	4985.70
56	16N674E089	58	260	5454.72
57	16N675E089	55	235	5760
58	16N676E089	53	205	5760
59	16N676E091	53	210	5760
60	16N677E091	50	180	5760
61	16N678E095	51	240	5760
62	16N678E096	52	260	5760
63	16N679E089	44	130	5760

* Measured to the center of the tract.

PENSACOLA SOUTH No. 1 AREA (Cont')

<u>Tract No.</u>	<u>Block</u>	<u>Approx. Distance From Shore* (Statute Miles)</u>	<u>Appro. Water Depth (Feet)</u>	<u>Acreage</u>
64	16N679E095	46	220	5760
65	16N679E096	47	240	5760
66	16N680E089	41	125	5760
67	16N681E123	36	150	5760
68	16N681E124	34	140	5760
69	16N682E118	41	210	5760
70	16N682E119	40	165	5760
71	16N682E120	38	130	5760
72	16N682E121	37	130	5760
73	16N682E122	35	135	5760
74	16N682E123	33	140	5760
75	16N682E124	31	140	5760
76	16N683E118	38	190	5760
77	16N683E119	37	155	5760
78	16N683E120	36	130	5760
79	16N683E121	35	130	5760
80	16N683E122	32	130	5760
81	16N683E123	30	135	5760
82	16N683E124	29	135	5760
83	16N684E118	36	180	5760
84	16N684E119	34	150	5760
85	16N684E120	33	125	5760
86	16N684E121	32	125	5760
87	16N684E122	30	125	5760
88	16N684E123	28	130	5760
89	16N684E124	26	130	5760

* Measured to the center of the tract.

PENSACOLA SOUTH No. 1 AREA (Cont')

<u>Tract No.</u>	<u>Block</u>	<u>Approx. Distance From Shore* (Statute Miles)</u>	<u>Approx. Water Depth (Feet)</u>	<u>Acreage</u>
90	16N685E118	33	165	5760
91	16N685E119	32	145	5760
92	16N685E120	30	130	5760
93	16N685E121	29	125	5760
94	16N685E122	28	125	5760
95	16N685E123	26	125	5760
96	16N686E118	30	145	5760
97	16N686E119	29	130	5760
98	16N686E120	28	125	5760
99	16N686E121	26	120	5760
100	16N687E118	27	130	5760
101	16N687E119	26	125	5760

OFFICIAL LEASING MAP, APALACHICOLA SOUTH
(Approved October 10, 1972)

APALACHICOLA SOUTH AREA

102	16N650E157	96	175	5760
103	16N650E158	96	170	5760
104	16N651E157	93	170	5760
105	16N651E158	94	155	5760
106	16N652E157	90	160	5760
107	16N652E158	91	150	5760
108	16N653E157	87	150	5760
109	16N653E158	88	130	5760
110	16N653E159	89	130	5760
111	16N654E157	84	150	5760
112	16N654E158	85	135	5760
113	16N654E159	87	135	5760
114	16N655E158	82	135	5760
115	16N655E158	84	130	5760
116	16N656E158	80	130	5760
117	16N656E159	81	125	5760
118	16N657E157	76	130	5760
119	16N657E158	79	130	5760
120	16N657E159	79	125	5760
121	16N658E157	73	130	5760
122	16N658E158	75	130	5760
123	16N658E159	76	125	5760
124	16N659E157	71	130	5760

* Measured to the center of the tract.

APALACHICOLA SOUTH AREA (Cont')

<u>Tract No.</u>	<u>Block</u>	<u>Approx. Distance From Shore* (Statute Miles)</u>	<u>Approx. Water Depth (Feet)</u>	<u>Acreage</u>
125	16N659E158	72	125	5760
126	16N659E159	74	125	5760
127	16N660E156	66	130	5760
128	16N660E157	68	125	5760
129	16N660E158	69	125	5760
130	16N660E159	71	120	5760

OFFICIAL LEASING MAP, TARPON SPRINGS
(Approved October 10, 1972)

TARPON SPRINGS AREA

131	17N642E048	56	130	5760
132	17N642E049	53	125	5760
133	17N642E050	50	120	5760
134	17N643E048	56	130	5760
135	17N643E049	54	125	5760
136	17N643E050	51	120	5760

OFFICIAL LEASING MAP, TAMPA
(Approved October 10, 1972)

TAMPA AREA

137	17N639E052	44	120	5760
138	17N639E053	40	110	5760
139	17N639E054	37	105	5760
140	17N639E055	34	100	5760
141	17N640E050	50	130	5760
142	17N640E051	47	125	5760
143	17N640E052	43	120	5760
144	17N640E053	40	110	5760
145	17N641E049	53	130	5760
146	17N641E050	50	125	5760
147	17N641E051	47	120	5760

* Measured to the center of the tract.

ATTACHMENT D

REPORT OF THE

WORK GROUP ON OCS SAFETY AND POLLUTION CONTROL

U. S. Geological Survey

Members:

A. Dewey Acuff
J. R. Balsley
Henry W. Coulter
B. F. Grossling
Hubert Risser
W. A. Radlinski, Chairman

May 1973

Abbreviations Used In The Report

AEC - Atomic Energy Commission

ANSI - American National Standards Institute

API - American Petroleum Institute

ASME - American Society of Mechanical Engineers

ASTM - American Society for Testing and Materials

EPA - Environmental Protection Agency

FAA - Federal Aviation Agency

LMS - Lease Management Study (conducted by a team of systems analysts from the U.S. Geological Survey)

NAE - National Academy of Engineering (specifically a panel of the Marine Board who conducted a study of OCS safety)

NASA - National Aeronautics and Space Administration (specifically the team of NASA analysts who conducted a study of OCS operations)

NOAA - National Oceanic and Atmospheric Administration

OCS - Outer Continental Shelf

OOC - Offshore Operators Committee (Gulf of Mexico)

USCG - United States Coast Guard

USGS - United States Geological Survey

WOGA - Western Oil and Gas Association

The Director, U.S. Geological Survey (USGS) appointed a Work Group to review the findings of three studies conducted at the request of the USGS on improving safety and pollution control in the management of Outer Continental Shelf oil and gas operations, and to recommend appropriate implementation actions. The studies are identified in the Appendix.

This report is not only responsive to the specific recommendations of the studies, but also reflects findings from meetings with personnel from the American Petroleum Institute, the Offshore Operators Committee, the Western Oil and Gas Association, a panel of the Marine Board, National Academy of Engineering, NASA, Occupational Safety and Health Administration, the Department's Office of the Solicitor, and others.

Several actions have already been taken where an immediate response was considered necessary or desirable. For example:

- o Contracts studies have been made to determine requirements for implementation of systems analysis reviews.
- o The Marine Board, National Academy of Engineering, has agreed to establish a Review Committee on Safety of OCS Petroleum Operations.
- o Action was initiated to expand OCS Accident Investigation Procedures to include an immediate notification, after the occurrence of an accident, to all OCS lessees and operators of potentially hazardous situations (Safety Alert).
- o The Environmental Protection Agency, the National Oceanic and Atmospheric Administration, and the U.S. Coast Guard have been requested to participate in the implementation of appropriate recommendations of the NAE study.
- o Opinions have been obtained from the Department of Justice and the Office of the Solicitor on the legal aspects of certain implementation actions.
- o Arrangements were made for API cooperation in the implementation of those recommendations calling for its participation.
- o Safety committees have been established in the Offshore Operators Committee and the Western Oil and Gas Association.

Similarly, the Conservation Division of the U.S. Geological Survey, which has the regulatory responsibility for OCS activities, has already responded to various recommendations as a result of direct discussions the Work Group has had with them during the course of the study. For example, inspection procedures developed in the Lease Management Study have been implemented.

The report is organized in sections by subject. Each section contains the related recommendations from the three study reports, some remarks, the Work Group's recommendation, and finally the implementation action required.

1. FAILURE REPORTING AND CORRECTIVE ACTION

RECOMMENDATIONS OF STUDIES

NASA--*It is therefore recommended that USGS lay the groundwork for the type of activity, described above (a closed-loop, failure reporting and corrective-action program), in the drilling and production phase of the oil industry by requiring monthly summaries from each operator of failure causes and corrective action taken for all safety equipment specified by OCS Orders. All accidents and oil spills should follow similar procedures. For the procedure to be effective, its object should be recurrence prevention, with emphasis placed on the determination of causes, preventive action, and follow-up.*

This recommendation, if adopted, will have a significant impact, primarily due to the change in policy made necessary by the majority of offshore operators. The statement is often made by offshore people that "the only real test of equipment is to place it in service in the Gulf".

Whether this is a valid assumption or not, the data from this "test" should be utilized to maximum advantage. The basic philosophy to be followed is that every failure has a cause, every cause can be understood, and every failure can be corrected or alternate procedures provided.

REMARKS

In order to promote technological improvements in equipment necessary for safe offshore operations, and to reduce the occurrence of equipment malfunctioning, all operators should develop a systematized method for failure identification. In many cases, malfunctioning equipment has been replaced or repaired with little or no attempt made to determine the reason for failure. Consequently, a piece of equipment with an inherent failure problem might continue to be used and replaced for a period of time before the reason for continual failure is discovered. In conjunction with an analysis of failures, a corrective action program is necessary to guard against a recurrence of the same type of failure. Implementation of NASA's recommendation would tend to encourage operators to work more closely with their suppliers to determine and remedy causes of equipment failures. Analysis of accidents and oil spills would help to identify items for closer inspection and to determine patterns of equipment failure.

OCS Order No. 5, revised effective June 5, 1972, requires a quarterly failure analysis report for subsurface safety devices. Initial experience with this system should indicate the most favorable manner in which to proceed with failure reporting on other equipment.

WORK GROUP RECOMMENDATION NO. 1

It is recommended that the USGS require all operators to establish an internal failure-reporting, corrective-action program, to include: 1) an operator's report to the USGS on incidents, problems, and failures which result in fires or reportable oil spills or reportable accidents; 2) the factual circumstances surrounding the incident; and 3) the corrective actions taken. The operator's report to the USGS should be required on a scheduled basis. Data from the reports should be computerized to facilitate analyses and corrective actions. Implementation of this recommendation should not preclude compliance with the existing requirements for immediate reporting of serious accidents, all fires, and spills as specified in 30 CFR 250.43 and 250.45, and pertinent OCS Orders.

IMPLEMENTATION ACTION REQUIRED

The Conservation Division should determine the requirements for reporting and include them in OCS Orders. For those cases where the OCS Orders cannot be issued within a reasonable period of time, notices, as appropriate, should be issued to all operators.

2. ACCIDENT INVESTIGATION AND REPORTING

RECOMMENDATIONS OF STUDIES

NAE --*The official reports stemming from investigation of major accidents should receive prompt and full public disclosure, and should be available in a readily accessible form.*

The U. S. Government should directly sponsor, encourage, and provide the means for a public exchange of information on the causes and effects of accidents, and on the performance of specific items of safety-related equipment in the offshore industry.

A careful analysis should be carried out after every major offshore oil spill to determine the precise manner in which the spill occurred -- taking into account any equipment failures, personnel errors, or design inadequacies, their causes and what can be done to prevent such future occurrences.

The information resulting from accident investigation and evaluation of component performance should be analyzed by a competent organization (similar to the National Transportation Safety Board or the Marine Safety Council), and its conclusions should be made public promptly.

REMARKS

The Conservation Division established, on April 12, 1971, a procedure for "Notification and Investigation of Accidents". This procedure is designed to provide prompt investigation and systematic review of accidents as a basis for taking immediate corrective actions to limit the probability of recurrence. No provision is made, however, for public disclosure of findings such as is practiced by the U.S. Coast Guard and the Federal Aviation Agency. Publication of accident investigation results is desirable to develop public confidence in, and acceptance of, petroleum operations offshore.

The Assistant Solicitor in his memorandum of January 10, 1973, to the USGS stated that, "...there does not seem to be any legal objection to the publication of such reports. However, it is necessary to be careful about the content of the report published. For example, any proprietary information should be deleted before publication. Moreover, the report should be limited to factual statements and should not include judgments on the conduct of companies or personnel. The Geological Survey should consult the Solicitor's Office before publishing any reports".

WORK GROUP RECOMMENDATION NO. 2

The Work Group agrees with all four recommendations of the NAE Study, i.e.:

- a. Reports of major accidents stemming from the current USGS procedure for investigation of accidents should be made available to the public promptly.
- b. Work Group Recommendation No. 3, calling for a system for disseminating information concerning equipment failures and accidents, should include a means for the public to have access to the information.
- c. Analyses of causes of major oil spills should be made as part of the accident investigation procedure and, if required, by additional follow-up studies. Results of all such analyses should be provided to the Review Committee (see Work Group Recommendation No. 15).
- d. Results of accident investigations, in addition to being made available to the public, should be provided to the Review Committee for possible further analyses.

IMPLEMENTATION ACTION REQUIRED

The Conservation Division should begin immediately to implement the above recommendations. They will need to determine the format and means of disseminating reports to the public and consult with the Solicitor's Office prior to release.

Referral of appropriate items to the Review Committee should be done by the Director, USGS.

3. INFORMATION EXCHANGE

RECOMMENDATIONS OF STUDIES

NASA--*It is recommended that the USGS investigate the legal question of a possible anti-trust law violation regarding formal exchange of hardware and method problem information within the oil and gas industry. If a favorable ruling is obtained, USGS should encourage and participate in the development and operation of the system.*

As an alternative, USGS could become the focal point for this information and disseminate it to all concerned parties.

NAE --*In addition to, and separate from the inspection procedures, there should be a government-sponsored system of reporting safety-related information for the purpose of improving the safety of offshore operations and the inspection system by additions and eliminations. This system, in order to be effective, must take into consideration and allow for the problems of self-incrimination.*

REMARKS

To utilize fully the information gathered through a failure and accident reporting and corrective action program, it will be necessary to disseminate such information throughout the offshore petroleum industry. NASA has noted that it has been successful in providing a rapid exchange of information in the space program which has been one of the keys to its success. The Atomic Energy Commission also employs procedures to notify all AEC installations of accidents, their causes, and remedial actions to prevent recurrences.

WORK GROUP RECOMMENDATION NO. 3

The USGS should establish and operate a system for disseminating information concerning equipment failures and accidents, utilizing data obtained through a failure and accident reporting and corrective action program, operator reports, and investigations conducted by the USGS. Such information should be made readily available to the public.

A system should also be established for immediate notification to all operators of a potential failure or accident as a result of specific incidents, prior to a full investigation and final dissemination of information.

IMPLEMENTATION ACTION REQUIRED

In view of the mass of data to be handled, and the intricacies of a system for evaluating, cataloging, and dissemination of information, the USGS should contract for the design by data-bank specialists. Due consideration should be given to the possible adaptation to USGS needs of dissemination systems used by other agencies such as NASA, AEC, FAA, and others.

A "Safety Alert" system for immediate notification to all operators of failures and accidents has already been implemented.

4. RESEARCH AND DEVELOPMENT

RECOMMENDATIONS OF STUDIES

NASA--It is recommended that USGS establish a method to determine needs and conduct or direct the research, testing and development necessary to improve equipment and methods for an increasingly safe and pollution-free operation on the OCS.

An alternate recommendation is that USGS work with the industry in establishing an organization such as the American Petroleum Institute (API) to serve as the R&D focal point, with all companies contributing toward resolution of problems.

NAE --The U. S. Government should encourage and utilize industry research and development programs by means of promotion of industry consensus standards on offshore technology so that it can act to ensure that information on improvements in safety technologies becomes available to participants in offshore resource development.

The U. S. Government should sponsor a coordinated program to specify reasonable limits of crude oil intrusion in accordance with biological and aesthetic standards. These standards should be set in a manner that will take full account of site variables. The effort should be carried out on a continuing basis in order to take advantage of improvements in the technology of offshore petroleum operations. The program should be specifically directed to provide a basis for engineering design and standards for components and systems to be used in offshore petroleum operations.

The U. S. Government should make quantitative studies of the effectiveness of the various present and potential methods of cleaning up oil from the marine environment, and of their potential marine environmental impact.

The U. S. Government should actively encourage and sponsor the development and testing of damage-limiting and fail-safe systems and techniques in the areas of damage control, fire-fighting, and well control.

REMARKS

Considerable research has been conducted by various segments of the petroleum industry and by certain governmental agencies in matters related to offshore

drilling and producing operations. In the past, however, development of additional safety controls by the industry often resulted only as a side effect from the main thrust of its research efforts. NASA has noted that individual companies have R&D programs devoted primarily to improving production capability with some effort to improve safety and anti-pollution equipment and methods included.

The Solicitor's Office has advised that there is legal authority to enter contracts for scientific or technological research into any aspect of problems related to Interior Department programs (42 USC § 1900), but there is no authority to require OCS operators to conduct R&D. They further advise that a joint Government-Industry R&D program would be a possibility, but would be more complex than a program operated by the USGS alone.

WORK GROUP RECOMMENDATION NO. 4

- a. The USGS, in cooperation with the API, should establish a program to encourage and promote research and development in safety and anti-pollution equipment and systems. Current and completed research and development should be taken into account in the determination of specific needs. Such needs should be communicated to industry through API. For those needs where there is no response from industry, or the response is unsatisfactory, the USGS should contract for the required work. (See also Recommendation No. 8a.)
- b. With specific reference to the NAE recommendations, the Work Group recommends:
 - (1) The promotion of industry consensus standards should be effected through a cooperative arrangement with API (see Work Group Recommendation No. 5).
 - (2) Requests should be made to NOAA, USCG, and EPA to sponsor programs to study the effects of various amounts of crude oil intrusion into the marine environment, taking into account site variables.
 - (3) The recommendation to undertake quantitative studies of the effectiveness of methods for cleaning up oil from the marine environment should be referred to the U. S. Coast Guard.
 - (4) The development and testing of damage-limiting and fail-safe systems in the area of damage control, fire-fighting, and well control should be an item for follow-up under the cooperative arrangement with API.

IMPLEMENTATION ACTION REQUIRED

Arrangements have been made with API for the recommended cooperative effort and the desired programs are underway with personnel from the Conservation Division participating.

EPA, NOAA, and the USCG have been requested to respond to the NAE recommendations. Their replies were favorable and pointed out the various pertinent activities in which they are already engaged.

5. STANDARDS AND SPECIFICATIONS

RECOMMENDATIONS OF STUDIES

NASA--That USGS seek API cooperation in establishing a committee to function under USGS guidance for the purpose of determining specific needs, and to write, review and approve standards/specifications for safety and anti-pollution equipment. The committee must function under the guidance of USGS.

That specifications developed by the committee contain requirements for a basic quality control system and, where equipment is to be used in a deleterious environment, an environmental test program. The committee should use, as a quality system guideline, the quality control provisions of the Bureau of Mines specification covering fuses for trailing cables used in coal mines, and in NASA Publication NPC 200-3, "Inspection System Provisions for Suppliers of Space Materials, Parts, Components and Services".

That the USGS, through OCS Orders, require the use of approved standards/specifications.

As an alternate recommendation, if the USGS cannot obtain API participation, it is recommended that USGS establish a committee, comprised of appropriate members from the industry, for the purpose of developing these standards/specifications for equipment and methods used in OCS operations.

NAE --The U.S. Government should encourage and support the development of a comprehensive system of industry consensus standards and should make use of the resulting standards system in the regulation and inspection of the offshore industry, and make adherence to such standards a consideration in the issuance of permits.

The American National Standards Institute (ANSI) should be used jointly by government and industry to integrate the efforts of government, industry, and the professional societies for the development of industry consensus standards for personnel, equipment, and operating procedures.

U. S. Government personnel associated with offshore resource development should participate in the standards preparation procedures and there should be means of assuring that such government personnel can participate as equals.

Industry and the U. S. Government should establish a working relationship for the joint development of standards for advanced deep water technology. Industry consensus standards for completion and workover safety procedures should be developed. Special consideration should be given hazard control and damage limiting methods.

The U. S. Government should develop a policy regarding the testing of offshore equipment, including the establishment of criteria for selection of test sites for such equipment in the marine environment.

REMARKS

NASA has noted the need for the development of new and more meaningful standards. It was also noted that many standards had been written in too general terms, insufficient to adequately describe a specific situation. Although equipment quality is of the utmost concern to oil operators, no requirements have been placed on manufacturers for a quality control system. Organizations already in existence, such as the American National Standards Institute, American Petroleum Institute, American Society for Testing Materials, American Society of Mechanical Engineers, etc., are best qualified to develop the necessary standards.

WORK GROUP RECOMMENDATION NO. 5

The USGS, in cooperation with API, should identify needs for additional or more specific standards for safety and anti-pollution equipment. The standards should include performance requirements for the operational testing of the equipment in the marine environment. Arrangements should be made with ANSI for the development of needed standards. API, ASTM, ASME, and other organizations should be requested to prepare proposed standards as appropriate, with USGS participation. Standards adopted by the USGS should be published and incorporated in OCS Orders. (See also Work Group Recommendation No. 4.)

IMPLEMENTATION ACTION REQUIRED

Arrangements have been made with API for its cooperation. The program is underway with participation by personnel of the Conservation Division.

6. SYSTEMS ANALYSIS^{1/}

RECOMMENDATIONS OF STUDIES

- NASA--1. The team recommends that USGS request identification of operations and equipment critical to safety of personnel and pollution prevention. Data to complete this "Critical Items List" could be derived from two sources. One, from compilation of accident history and problem/failure reports, is the topic of another recommendation. The second source could result from analysis of the systems utilized to perform a given function. Two types of design/system analysis most commonly used in industry today are the Failure Mode, Effect Analysis (FMEA) and the Hazard Analysis (HA).
2. The USGS Gulf Coast Regional Office should be authorized to implement the proposed "design review" group.
 3. The region should require submission from offshore operators a list of critical operations to be performed during drilling at time of permit request. List of critical systems should also be obtained at the time of well completion, and appropriate reviews conducted with the operator.
 4. The requirement for submission of complete Hazard Analysis should be phased into system starting with new work, with time limits on existing wells.
 5. The analysis group should work with operators to eliminate (reduce) hazardous operations by recommending redesign of hardware or operations.
 6. Inspection criteria should be revised to include any additional critical equipment identified by Hazard Analysis.
- LMS --1. Systematic procedures should be established to identify potential hazards associated with various OCS operations and provide risk assessments.
2. Design specifications for a safety program to be implemented by industry as a means of further reducing risk of accidents and losses on the OCS. The specifications should emphasize (1) the early identification of hazards, preferably in the

^{1/} "Hazards Analysis" is the term used in the NASA report. "Systems Analysis" is substituted herein because it is broader and more descriptive of what actually is desired in the Work Group's recommendation.

design or planning stage of an operation and (2) the explicit statement of assumed risks and losses associated with the operation. Such statements and hazard analyses should eventually be part of applications for new platforms and associated production equipment. As part of the first phase of the safety program, each operator should be required to submit a general safety plan following Survey-defined specifications.

REMARKS

In order to evaluate Hazards Analysis and Failure Mode and Effects Analysis procedures more fully, the USGS contracted for such analyses of actual offshore drilling and producing operations. Two separate contracts were completed, one by the General Electric Corporation and the other with the Southwest Research Institute. The results are now being studied.

WORK GROUP RECOMMENDATION NO. 6

The USGS should require lessees to submit a systems analysis prior to granting approval for platforms, pipelines, drilling operations, and production operations. Operators should provide with each analysis, an identification of operations and equipment critical to safety of personnel and pollution prevention. The latter information should be incorporated into a "Critical Items List". A phased program requiring systems analysis on existing platforms and pipelines should also be developed.

IMPLEMENTATION ACTION REQUIRED

Implementation of the recommendation will require study of the findings of the recently completed contracts for hazards analysis. Assuming satisfactory results, the requirements for systems analysis should be incorporated in OCS Orders and the necessary staffing for review of analyses should be developed by the Conservation Division. The reorganization of the Conservation Division provides for an operational unit to accomplish this work.

7. ENGINEERING DOCUMENTATION

RECOMMENDATIONS OF STUDIES

NASA--*It is recommended that USGS require that certain minimum engineering documentation be available at the operator's lowest level onshore engineering office. This recommendation is made in pursuit of the preceding recommendation and others contained in this report, as well as the USGS stated objectives of reviewing process equipment designs more closely. The following list is recommended as minimum requirements:*

1. *Structural layout and details.*
2. *Piping runs.*
3. *Schematic diagrams (mechanical and electrical).*
4. *Engineering parts list (complete to valve and power supply level, including part number, name and manufacturer).*
5. *Specifications for all actively functioning components.*

REMARKS

The engineering documentation of some platform systems is incomplete, and where such documentation exists, it is not always readily available to operating personnel. The availability of complete documentation at the working level is essential for immediate analysis of problems or malfunctions that could lead to accidents.

WORK GROUP RECOMMENDATION NO. 7

OCS Orders should include requirements for certain minimum engineering documentation such as wiring diagrams, structural layouts, piping layouts, etc., to be readily available at the operator's lowest level onshore engineering office, with copies to the USGS. A Conservation Division task force should identify which documentation is required.

IMPLEMENTATION ACTION REQUIRED

The Conservation Division should organize a task force to identify the required documentation, consult with operator groups to determine that particular items can be provided meaningfully, and include appropriate requirements in OCS Orders.

8. WEAROUT PREVENTION

RECOMMENDATIONS OF STUDIES

- NASA--1. Development of a reliable sand erosion probe under USGS sponsorship (including a specification).
2. USGS revision of OCS No. 8 specifying method of implementation of sand erosion probe.
 3. Requirement for rigorous test and inspection (X-Ray/sonic) of wells upon sand detection.

At a later date, when data on failed equipment are available, an evaluation of the necessary inspection frequency and/or periodic replacement of selected safety equipment should be undertaken.

REMARKS

Sand erosion is a major cause of failure of safety equipment on wells producing sand. Although some research toward development of reliable sand erosion detectors is underway, this effort should be accelerated.

WORK GROUP RECOMMENDATION NO. 8

- a. Include the development of a reliable sand erosion detector in the research and development program (see Recommendation No. 4).
- b. Develop rigorous test and inspection procedures for detection and control of sand erosion (see Recommendation No. 12).
- c. Using data from a failure reporting and corrective action system and other sources, specify the requirements for the frequency of inspection and the frequency of replacement for equipment susceptible to failure, and include them in OCS Orders.

IMPLEMENTATION ACTION REQUIRED

The Conservation Division should incorporate the requirement of Recommendation No. 8a in the Research and Development program, and those of Recommendation No. 8b and No. 8c in its Inspection Procedures program. OCS Orders should be revised accordingly.

9. TRAINING AND CERTIFICATION

RECOMMENDATIONS OF STUDIES

NASA--It is recommended that USGS require, through revision or addition of OCS Orders, that:

1. Operators develop methods to ensure that company or contract personnel performing inspection and test of safety or anti-pollution equipment are properly trained in USGS requirements, the equipment functions, test methods, etc., prior to performing these services and that training is periodically updated as equipment is modified or new types of equipment are utilized. Operator or outside-source certification of personnel following demonstration of skill should be required.
2. Operators provide USGS with a description of the methods to be employed in accomplishing the above, and that these methods be approved in advance by USGS.

NAE --Since operator training programs are essential to safety in offshore resource development, the U. S. Government should:

Actively encourage and support such training programs; including the objective of safe and reliable operation, installation, maintenance, and repair of equipment systems and components;

Sponsor industry-government standardization of training criteria;

Give weighted consideration to the existence and quality of job qualification requirements and corresponding personnel training in permit procedures;

Ensure the participation of U. S. Government personnel involved in standard setting, regulation and inspection or permit procedures in such training programs.

REMARKS

A considerable amount of vocational training and some safety training is already accomplished under the auspices of the Committee on Vocational Training of the Division of Production of API through courses given in various colleges and universities in the Gulf Coast area. The International Association of Drilling Contractors also trains drilling personnel, and a considerable amount of training is accomplished by the individual companies.

A Solicitor's opinion on legal authority for the USGS to require operators by regulation or OCS Order to develop and submit for approval programs for the training and certification of company personnel was answered on April 27, 1972, as follows: "In order to implement such a program, it is our opinion that Geological Survey must first set standards to be met by the companies for training and certification of personnel in safety and pollution control. Any course of study or training program sufficient to meet these standards should then be approved by Geological Survey. Companies should be free to establish their own training programs or send their personnel to an approved course".

WORK GROUP RECOMMENDATION NO. 9

a. The USGS, working with industry through API, should set standards and requirements for training of personnel, to include, but not be limited to, the following:

- (1) A requirement for minimum training in safety and pollution prevention and control for all company and contractor personnel, including identification and proper use of safety equipment, emergency procedures, and first aid.
- (2) A requirement that appropriate company and contractor field personnel be briefed on USGS regulations and orders.

Standards and requirements for such training should be specified in OCS Orders and a certification of compliance should become a prerequisite for certain permits and operational work. Appropriate credit should be given for pertinent experience.

b. USGS field supervisory personnel and inspectors should be required to participate in training courses appropriate to their responsibilities.

IMPLEMENTATION ACTION REQUIRED

Arrangement have been made with API for a joint effort to develop the necessary standards and specifications for training of industry personnel. The Conservation Division should pursue this effort and revise OCS Orders accordingly.

Requirements for appropriate training of USGS personnel should be included in the Division Manual.

The Conservation Division should arrange for briefing programs on USGS regulations and orders.

10. MOTIVATION PROGRAM

RECOMMENDATIONS OF STUDIES

NASA--*It is recommended that USGS initiate an OCS-wide safety and anti-pollution motivation program. Such a program could be effective in terms of obtaining industry response and favorable publicity.*

A program consisting of at least the following elements is suggested.

- 1. Visual aid package consisting of dramatic evidence of the results of carelessness and human error (pictures of platform fires, etc.) accompanied by analysis of typical events leading to accidents and pollution.*
- 2. Periodic review of accident (safety and pollution) records, from available statistics, with appropriate awards for top performance. The awards should be public ceremonies with maximum possible publicity.*

The government program could be put together by an outside company specializing in the field, but should be conducted by USGS.

Additional elements recommended to be implemented by off-shore operating companies, with some USGS participation, are:

Safety training for all field personnel to include identification and proper use of all safety equipment. Review of all emergency procedures with periodic drills. Instructions concerning daily operations to avoid pollution and minimize hazards.

Periodic review of accident and pollution history to field employee level with recognition for good performance. Recognition would assist in obtaining cooperation for better reports of incidents.

Employee suggestion program regarding safety improvements for both equipment and operations. Again, a recognition system is recommended for accepted suggestions.

REMARKS

The Work Group feels that safety and anti-pollution motivation programs would be more effective if sponsored by industry, albeit the USGS should encourage such programs and participate as appropriate.

WORK GROUP RECOMMENDATION NO. 10

The USGS should ask API to take the lead in promoting safety and anti-pollution motivation programs for all personnel involved in offshore operations. API should be encouraged to obtain descriptions of the various motivation ideas and programs now practiced by several companies and publish the best in a brochure for others to consider for adoption.

IMPLEMENTATION ACTION REQUIRED

Arrangements have been made with API to assume leadership in motivation programs, encourage such programs throughout industry, and participate where appropriate. The Conservation Division should assist API in this effort.

11. LEASE MANAGEMENT PROGRAM

RECOMMENDATIONS OF STUDIES

NASA--It is recommended that USGS regional office extend the current effort by staffing, at the earliest possible time, with personnel experienced in quality management and capable of developing, documenting and assisting the Regional Supervisor in implementing this type program. As a minimum, this program should contain the following information:

1. An organization chart
2. Functional statement for each section, district and unit
3. List of reports required of each section, district, and unit
4. Personnel training records
5. Detailed procedures outlining the functions to be performed by USGS personnel at both the district and regional levels
6. Assignment and frequency of inspection functions
7. List depicting areas to be controlled in performing inspection functions
8. Guideline procedures covering inspection and/or tests to be witnessed by USGS district personnel
9. Waiver/departure procedure

It is recommended that NASA documents NPC 200-1A, "Quality Assurance Provisions for Government Agencies", and NHB 5330.7, "Management of Government Quality Assurance Functions for Supplier Operations", be used as guidelines.

USGS should require that all data generated from this planned quality effort be assembled at the regional and Washington offices to be analyzed and evaluated to determine the effectiveness of the district operations.

LMS --The major elements of the OCS Lease Management Program, the Production Program and the Revenue Program need to be coordinated and directed to avoid conflicts over available resources.

1. Designate an OCS Lease Management Program Coordinator.
2. The Survey should hold a formal annual review of the performance of the program components.
3. Survey management should delineate specific operational policies for both programs.
4. The Survey should encourage personnel, especially field technicians, to participate in industry training programs.
5. A paperwork management study should be conducted in order to streamline procedures for processing documents related to oil and gas operations.
6. All routine procedures, decision rules, policies, and operating criteria pertaining to OCS operations should be documented in a set of Branch of Oil and Gas Operations' Manuals.

REMARKS

Staffing for quality control management capability as recommended by NASA should be provided. These functions can and should be performed by the Operations Analysis Unit in the Conservation Division's Metairie Office when it is adequately staffed. This Unit as presently constituted includes groups with accident investigation, design review, orders and field rules, and pollution control functions.

The activities at the field level involved in the OCS lease management program are so diversified and time consuming that adequate means of coordinating them is essential. These functions, however, are the assigned responsibility of the Manager, the Supervisor, his Deputy, and the heads of the Sections, Units, and Groups now existing within the organizational structure. The Supervisor and his Deputy have the direct overall responsibility for coordination of the entire program and under a proper line-staff organizational structure it would not be

appropriate to delegate this responsibility to a "Program Coordinator". Additionally, the coordination of all activities should improve when the positions under the Conservation Division reorganization plan are filled and fully operational. However, if assistance in coordinating program activities is needed, such assistance should be added to the staff.

Also, the Division's reorganization plan, when fully implemented, should provide adequate coordination of the Lease Management Program at the Division headquarters level.

WORK GROUP RECOMMENDATION NO. 11

- a. The NASA recommendations listed above should be implemented to provide the needed quality management capability. Most of the items given as a minimum for the program plan are in existence, but they need to be reviewed, updated, consolidated, and systematically documented.
- b. The LMS recommendations listed above should also be implemented, with the exception of item 1. Instead of an OCS Lease Management Program Coordinator, necessary staff capability should be added for program coordination.

IMPLEMENTATION ACTION REQUIRED

The Conservation Division should add personnel to implement these recommendations.

The Director's Office should develop the guidelines for a formal annual review and prepare the recommended operational policies.

A contract will probably be required for the paperwork management study.

The recommended operations manuals should be developed by the Conservation Division as soon as possible.

12. INSPECTION PROCEDURES

RECOMMENDATIONS OF STUDIES

NASA--a. The data processing equipment, that the team (LMS study team) was advised is being considered for location in the Regional Office, should be installed at the earliest possible time.

b. The presently used Potential Incidence of Non-Compliance (PINC) list should be modified to separate the gathering of descriptive information (e.g., number of wells/platforms) from compliance information (e.g., satisfactory operation of check valves).

c. A method should be established to ensure that compliance characteristics of the PINC list are maintained current as OCS Orders are revised or added.

d. Conservation Division should devise a "best method" of adapting study techniques to the needs of Region operations. An operating procedure should then be developed, and implemented as soon as possible, in order to provide uniform guidance to all concerned personnel. The procedure should include the use to be made of information generated by District, Region, and Headquarters.

e. The procedures referenced above should be integrated into the overall OCS Management Program Plan.

LMS --1. Adopt the inspection techniques and methodology developed and utilized in the course of this study.

2. Expand the scope of the inspections to include other production operations as they are specified in conjunction with the hazard review activity and as new OCS Orders are written.

3. Continue the review and analysis of inspection results in order--

a. to modify inspection strategies and to allocate resources in response to changes in the level of company activity and compliance;

- b. *to advise the Offshore Operators Subcommittee on Safety of the inspection results.*
4. *Augment the existing enforcement authority with the addition of required fixed periods of shut-in time for specific items of noncompliance or combinations of items.*
5. *On a periodic basis, perhaps monthly, inform upper management of actions taken against their company.*

NAE --*Routine inspection procedures in the offshore industry should be carried out by the specific companies involved for compliance with industry consensus standards. U. S. Government inspections should be confined to spot-checking to ascertain compliance to regulations.*

REMARKS

USGS inspection procedures have been criticized for lack of uniformity among inspectors in the interpretation and application of OCS Orders. It is important that uniform practices be adopted.

LMS Recommendation 4 advocates that required fixed periods of shut-in time for specific items of noncompliance or combinations of items be added to existing enforcement authority. In response to an inquiry the Solicitor's Office stated, "The question to be asked is whether a particular regulation is designed to punish or whether it is germane to the regulatory function.... Thus, a period of shut-in which is necessary to carry out a legitimate regulatory function is permissible; however, if it is designed strictly for punishment it is not permissible, and new legislation would be required".

While it might be argued that such a shut-in would be designed as a deterrent to a recurrence of the violation, it is difficult to consider the shut-in itself anything other than a punitive action.

A further aspect is that while such a shut-in might punish the company by a temporary loss or deferment of income, the public would, likewise, have a deferment of royalty income and would suffer a loss of availability of fuel.

WORK GROUP RECOMMENDATION NO. 12

- a. The USGS should incorporate into its inspection program all of the NASA recommendations (a. through e. above) and LMS recommendations 1, 2, 3, and 5 above. Punitive fixed-period shut-ins (LMS

recommendation 4 above) are not permissible under existing legislation, nor are they considered advisable.

- b. OCS Orders should include requirements for lessees to conduct inspections on a scheduled basis and report the results in a specified format to the USGS.
- c. The USGS should explore the feasibility of third-party inspections as an alternative or supplement to lessee inspections.
- d. The PINC system of inspection should be periodically reviewed to determine how it can be modified and improved.
- e. The USGS should formalize inspection strategies and policies, including optimum frequencies of inspections, and emphasize improvement of methods for evaluating inspection results.
- f. The USGS should continue to evaluate procedure for inspection and enforcement to insure the application of rigorous and uniform practices in light of new requirements and past experiences.

IMPLEMENTATION ACTION REQUIRED

While some of the recommendations have already been implemented, the Conservation Division should take the necessary steps to require standardized inspections by lessees.

They should also determine the feasibility of third-party inspections and recommend to the Director appropriate follow-up actions.

Systematic review by the Conservation Division of inspection methods and strategies should be continued. Procedures should be developed for rigorous and uniform application. Inspectors should be instructed accordingly.

Attainable inspection frequency schedules should be developed. Wherein these are less than the optimum, requirements for additional required capacity should be identified.

13. OCS ORDER DEVELOPMENT

RECOMMENDATIONS OF STUDIES

NASA--In order to remain abreast of the ever-changing needs, the following recommendation is made: The USGS Regional Office should organize an OCS Order development and implementation function. This function, technical in nature, involves many hours of research, investigation, and discussion, and should be assigned to a small committee of qualified people selected by the Supervisor. This committee should:

1. Schedule meetings periodically to review current needs and evaluate existing Orders.
2. Meet with USGS Region management to determine their overall reaction to the proposed order and/or change.
3. Schedule meetings with the Offshore Operators Committee and/or subcommittee and discuss the change and the impact it will have on the operators and other companies operating in the OCS and document their comments and/or suggestions.
4. Schedule meetings with the USGS District engineers and chief technicians, discuss the proposed changes and document their comments.
5. If needed, consult with or solicit advice from field officials of other Government agencies and document their comments.
6. Assemble and consolidate the comments into a report for USGS Region management review and evaluation.
7. Coordinate for approval with the Washington level.
8. After the new Order and/or change has been agreed to by all concerned, develop the final draft to submit to Washington for signature.
9. After the Order is approved, serve in an advisory and assistance capacity to USGS management in assuring that concerned USGS and operator personnel thoroughly understand requirements prior to implementation and during implementation.

NAE --In order to avoid inhibition of technical development and to take maximum advantage of advances made in equipment and methodology, the U. S. Government policy should be to establish regulations in terms of the objectives to be achieved and not in terms of specific methods of achieving them.

In permit procedures, there should be continuation and refinement of the current practice of requiring submission of plans of applicants in terms of equipment and including personnel qualification and training procedures which will be used to control hazards. The government should continue to make granting and continuance of permits contingent upon adherence to regulation and submitted plans.

Regulations established for the control of offshore oil operations should take into account on a continuing basis the results of the analysis recommended above*, as well as consideration of the natural environmental hazards (such as hurricanes, earthquakes, or large waves, and the state of the art of working in the marine environment).

REMARKS

The development of OCS Orders is of utmost importance in achieving and maintaining safety and pollution control in OCS operations. More formalized organization and procedures are needed to develop new orders and to revise existing orders as new and improved technology and operating procedures are developed.

WORK GROUP RECOMMENDATION NO. 13

- a. Formalized procedures of the type outlined in the NASA recommendation should be established for development and revision of OCS Orders.
- b. In general, OCS Orders should specify the objectives to be achieved, with standards for achievement included by reference.
- c. The Work Group agrees with the NAE recommendations that 1.) there should be continuation and refinement of the current practice of requiring submission of plans of applicants in terms of equipment and including personnel qualifications and training procedures; and 2.) that regulations should take into account on a continuing basis the results of the analysis of information resulting from accident evaluation, as well as consideration of natural environmental hazards.

* Information resulting from accident evaluation

IMPLEMENTATION ACTION REQUIRED

The Conservation Division should prepare written procedures outlining the step-by-step actions to be followed in the formulation of OCS Orders for all areas, in keeping with the NASA and NAE recommendations.

14. STANDARDIZATION OF FORMS

RECOMMENDATIONS OF STUDIES

NASA--*It is recommended that the USGS revise the Pollution Report form, presently being utilized in the District offices, and require its use by the operators for those spills presently requiring written confirmation. The form should include as a minimum the following:*

- a. More detailed information, especially in the area of cause and corrective action. For example, if equipment malfunction is the cause, the reason should be recorded in detail.*
- b. The "corrective action taken" remarks should include, in detail, the repair, if any, that was accomplished to correct the immediate problem.*
- c. Information should be provided as to action taken to prevent recurrence.*

REMARKS

A revised Pollution Report form is needed to derive necessary information for corrective actions.

WORK GROUP RECOMMENDATION NO. 14

The Work Group agrees with the NASA recommendation above.

IMPLEMENTATION ACTION REQUIRED

The Conservation Division should revise the form and require its use.

15. SAFETY AND ADVISORY COMMITTEES

RECOMMENDATIONS OF STUDIES

- LMS --1. *Establish Offshore Operators Subcommittee on Safety-- Subcommittee and the Survey should periodically review the performance of the Safety Program and exchange information on potential hazards and review program specifications.*
2. *A hazard review committee should periodically review reports of accidents, unusual operating conditions, equipment malfunctions, and inspection results, assess the adequacy of the current OCS Orders, and recommend changes in regulations or procedures which would reduce risks of accidents and associated losses to both industry and government.*

OTHER--*The Director, USGS, recommended a review committee be established on safety of OCS petroleum operations to serve as an independent audit of the effectiveness of USGS operations and procedures.*

REMARKS

The recommended committees would serve to focus attention on safety and anti-pollution problems, and apply the collective expertise of several disciplines to provide solutions. A review committee would also serve as an independent audit of USGS OCS policies and operations.

As a result of the Work Group's suggestion, subcommittees on safety under the Offshore Operators Committee and the Western Oil and Gas Association have already been established. These subcommittees can 1.) review proposed changes or additions to orders and regulations, 2.) analyze industrial-type accidents that occur during drilling and producing operations, including pipeline operations, workovers, installing platforms, and related activities, 3.) collect statistics on industrial-type accidents and their causes, and 4.) promote and review the results of systems analyses.

After consideration of alternate ways to establish a review committee, arrangements were made for the committee to be established under the auspices of Marine Board, National Academy of Engineering.

It is expected to be established in July 1973 with the following objectives:

- o To provide advice on the policies and procedures of the USGS in fulfillment of its regulatory responsibilities for petroleum and gas operations in federal offshore areas related to safety, pollution control, and environmental protection.
- o Review, on an advisory basis, regulations, Outer Continental Shelf Orders, field rules, and the conduct of operations.
- o Prepare recommendations on the design of safety procedures and systems, and related programs.
- o When requested, review significant events and prepare recommendations for corrective measures.
- o To keep the public informed of its findings.

WORK GROUP RECOMMENDATION NO. 15

- a. Encourage the Offshore Operators Committee (OOC), as well as the Western Oil and Gas Association (WOGA), to establish a committee on safety. This committee can serve as a vehicle for communication between the operators and the Survey in discussions of general problems that arise.
- b. Establish a Systems Review Committee in each area with OCS operations, to be composed of key USGS field personnel. This committee should meet regularly to review accidents, unusual conditions, equipment failures, inspection results, and the adequacy of OCS Orders, and recommend appropriate changes in regulations, orders, and procedures. Reports of findings and recommendations should be submitted in writing to the Supervisor, with copies, through channels, to the Director, USGS.

IMPLEMENTATION ACTION REQUIRED

The Conservation Division should communicate with the safety committees of OOC and WOGA to maximize their effectiveness.

The Systems Review Committees should be established by the Conservation Division.

The Director, USGS, should propose items to the review committee for consideration. These would, of course, be additional to items which the committee would determine to consider on its own.

APPENDIX

Identification of Study Reports

1. "Applicability of NASA Contract Quality Management and Failure Mode Effect Analysis Procedures to the USGS Outer Continental Shelf Oil and Gas Lease Management Program," November 1971.

Members:

Morris K. Dyer, NASA	-- Marshall Space Flight Center
Dewey G. Little, NASA	-- Mississippi Test Facility
Earl G. Hoard, NASA	-- Marshall Space Flight Center
Alfred C. Taylor, NASA	-- Michoud Assembly Facility
Rayford Campbell, NASA	-- Michoud Assembly Facility

This report, prepared for the U.S. Geological Survey by a team of National Aeronautics and Space Administration specialists, examines the feasibility of applying to offshore oil and gas operations advanced engineering techniques designed to increase the reliability of safety and anti-pollution equipment, and includes several recommendations. The study period was three months.

2. "Outer Continental Shelf Lease Management Study," May 1972.

Members (USGS):

N. C. Matalas, Project Chief
E. R. Close
Thomas Maddock, III
D. W. Moody
H. E. Robinson
J. R. Slack
T. D. Steele

Part-time Consultants (USGS):

D. R. Dawdy
B. B. Jackson
I. C. James, II

This is a report of a study conducted by the Systems Laboratory Group, Water Resources Division, U.S. Geological Survey. The study was proposed by OMB and authorized by the Director, U.S. Geological Survey, in August 1970. The report describes Survey's Outer Continental Shelf Lease Management Program and sets forth recommendations for increasing the effectiveness of the program in achieving the objectives of safety and pollution prevention.

3. "Outer Continental Shelf Resource Development Safety: A Review of Technology and Regulation for the Systematic Minimization of Environmental Intrusion from Petroleum Products," December 1972.

Members (Panel of the Marine Board, NAE):

George F. Mechlin, Chairman	-- Westinghouse Electric Corp.
Claude R. Hocott	-- Esso Production Research Company
Bill J. Livesay	-- University of Tulsa
Richard C. Miller	-- Oceanographic Service, Inc.
J. Jamison Moore	-- Atlantis Scientific
William B. Rand	-- Submarex Corp. (Ret.)
Willard F. Searle, Jr.	-- Consulting Ocean Engineers (USN, Ret.)
Harvey J. Smith, Jr.	-- Lockheed Missiles and Space Co.

U.S. Government Liaison Representatives:

Keith B. Schumacher	-- U.S. Coast Guard
Eugene W. Standley	-- Department of the Interior

This is a report of a special study on operational safety in offshore resources development conducted by a panel of experts convened by the Marine Board, National Academy of Engineering, at the request of the Department of the Interior. The panel met in ten working sessions from May 1971 to August 1972. The report contains numerous recommendations.

GEOLOGIC TIME CHART

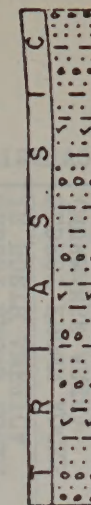
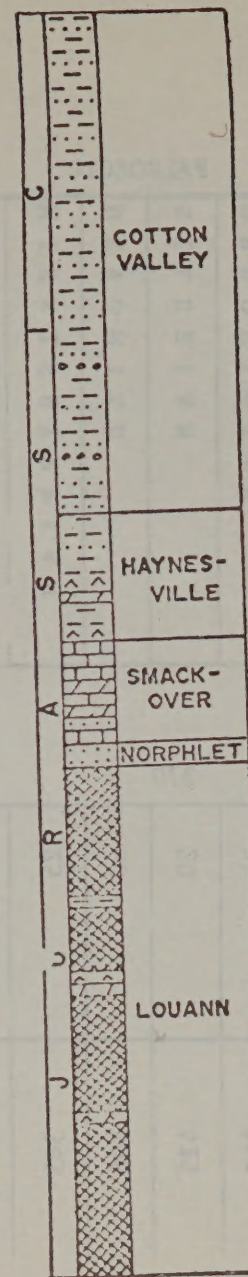
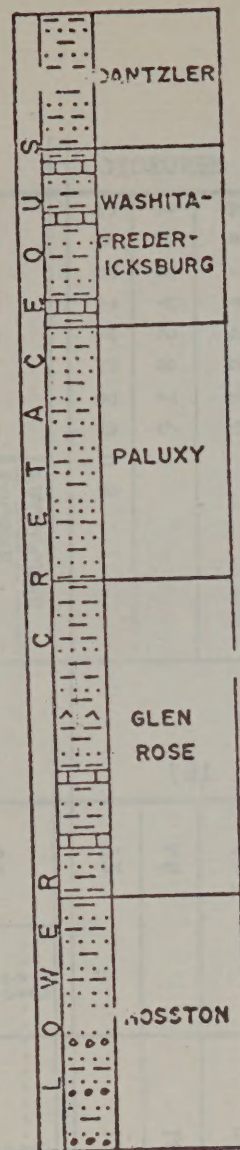
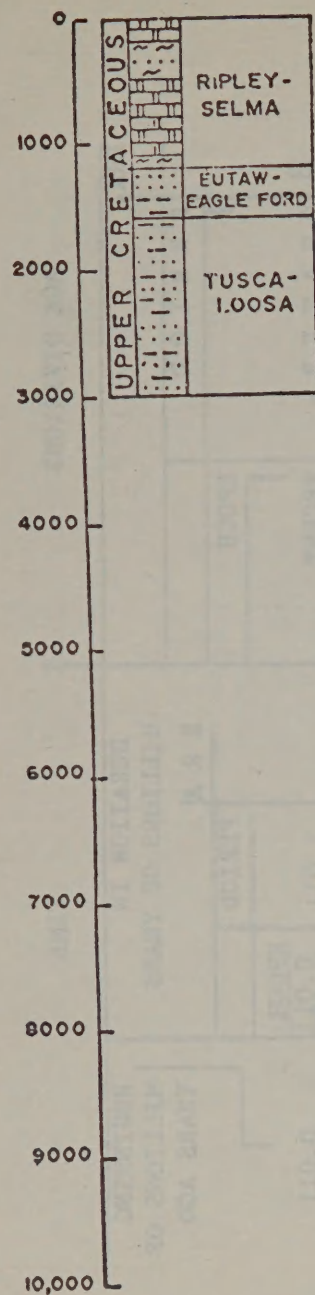
PERIODS		TIME	
PERIOD	STAGE	PERIOD	STAGE
CENOZOIC	QUATERNARY	1	1
	PLIOCENE	2	2
	PLEISTOCENE	3	3
	HOLOCENE	4	4
	PALEOCENE	5	5
MESOZOIC	CRETACEOUS	6	6
	JOHANNESBURG	7	7
	TRIASSIC	8	8
	DEVONIAN	9	9
	PERMIAN	10	10
PALAEZOIC	ORDOVICIAN	11	11
	SILURIAN	12	12
	DEVONIAN	13	13
	STENOZOIC	14	14
	OROVICIAN	15	15
	CAUCASIAN	16	16
	CHRYSTIAN	17	17
PRE-CAMBRIAN	OLDEST KNOWN ROCKS IN NORTH AMERICA	18	18
	OLDEST KNOWN ROCKS IN EUROPE	19	19
	OLDEST KNOWN ROCKS IN AFRICA	20	20
	OLDEST KNOWN ROCKS IN AUSTRALIA	21	21

ATTACHMENT E

GEOLOGIC TIME CHART AND CROSS SECTIONS THROUGH THE SALE AREA

G E O L O G I C T I M E C H A R T

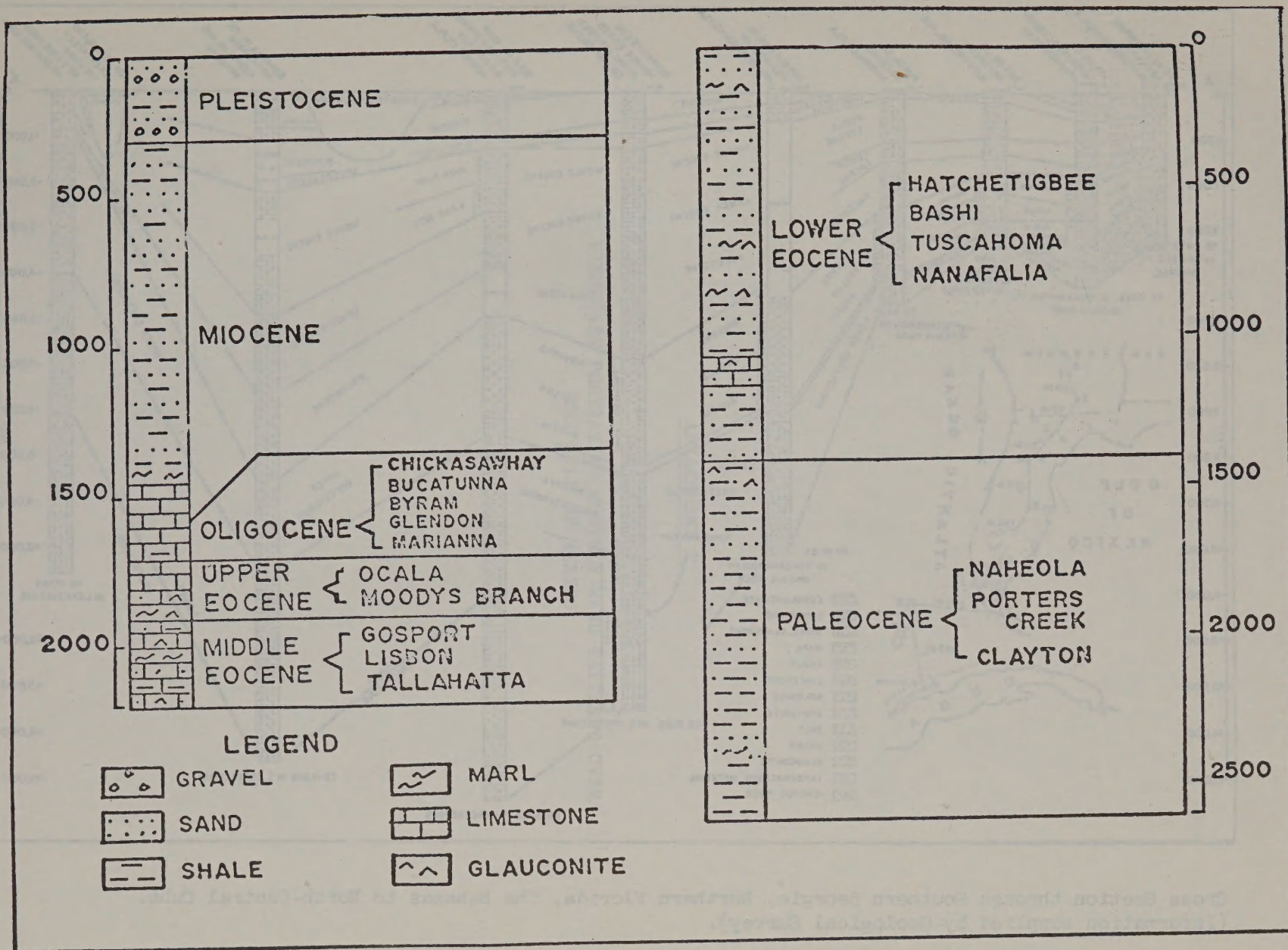
AGE DIVISIONS			TIME			
ERA			DURATION IN MILLIONS OF YEARS		BEGINNING MILLIONS OF YEARS AGO	
	P E R I O D	E P O C H	E R A	P E R I O D		
						E P O C H
CENOZOIC	Q U A T E R - N A R Y	RECENT	63.011	1.011	0.011	0.011
		PLEISTOCENE		2	2	
	T E R T I A R Y	PLIOCENE	62		12	13
		MIOCENE			12	25
		OLIGOCENE			11	36
		EOCENE			22	58
		PALEOCENE			5	63
MESOZOIC	C R E T A C E O U S		167	72	135	
	J U R A S S I C			46	181	
	T R I A S S I C			49	230	
PALEOZOIC	P E R M I A N		370	50	280	
	P E N N S Y L V A N I A N			40	320	
	M I S S I S S I P P I A N			25	345	
	D E V O N I A N			60	405	
	S I L U R I A N			20	425	
	O R D O V I C I A N			75	500	
	C A M B R I A N			100	600	
PRE-CAMBRIAN	GRENVILLE OROGENY		4000		1000	
	OLDEST KNOWN ROCKS IN NORTH AMERICA				3200	
	OLDEST KNOWN ROCKS (MURMANSK AREA)				3400	
	PROBABLE AGE OF THE EARTH				4600	



LEGEND

- | | |
|--------|-----------|
| GRAVEL | LIMESTONE |
| SAND | DOLOMITE |
| SHALE | ANHYDRITE |
| MARL | SALT |
| CHALK | IGNEOUS |

Composite Section of Mesozoic Sediments, Mississippi and Alabama. (Information Supplied by Geological Survey).

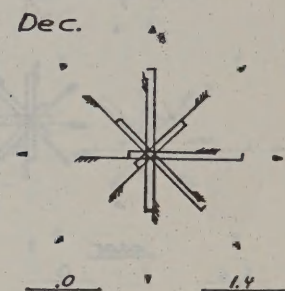
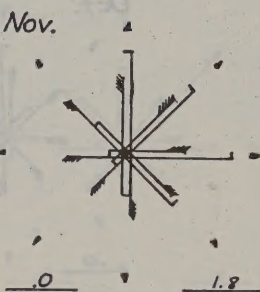
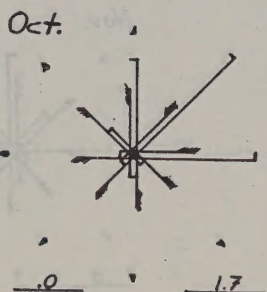
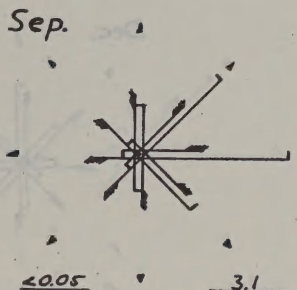
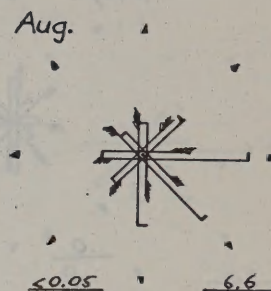
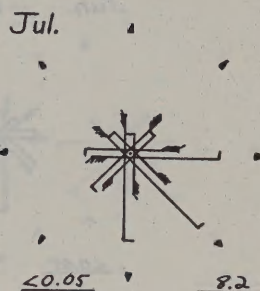
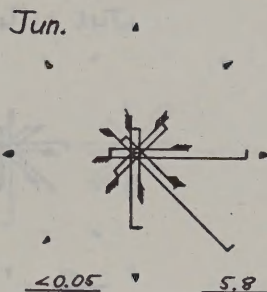
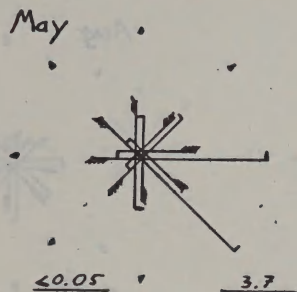
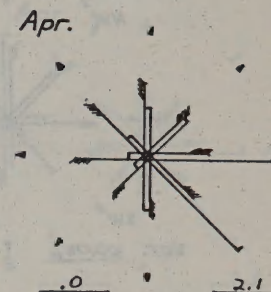
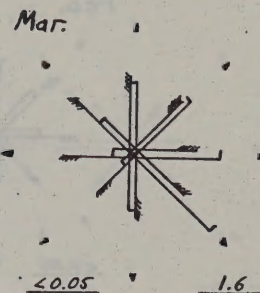
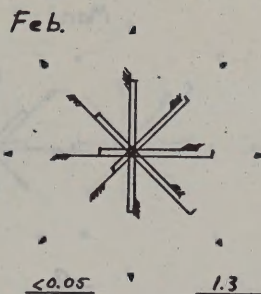
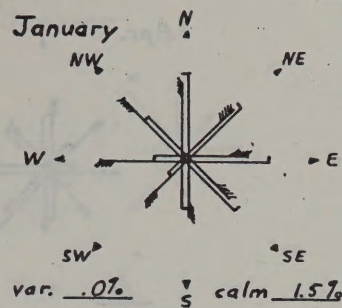


Composite Section of Cenozoic Sediments, Southwest Alabama. (Information supplied by Geological Survey).

ATTACHMENT F

WINDROSES PORTRAYING MONTHLY WIND PATTERNS OVER
THE GULF OF MEXICO

Monthly wind patterns observed over the Gulf of Mexico in an area bounded by 27° N. to the coastline and 89°-92° W (New Orleans Locality)*



Legend:

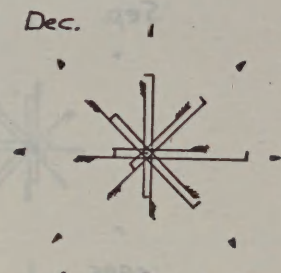
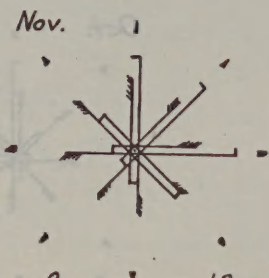
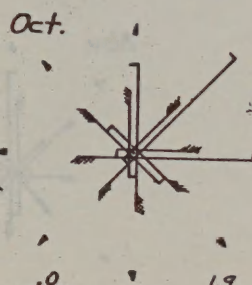
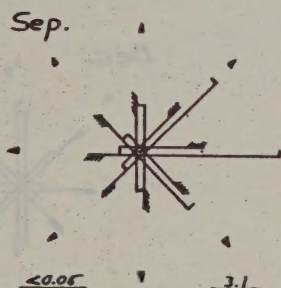
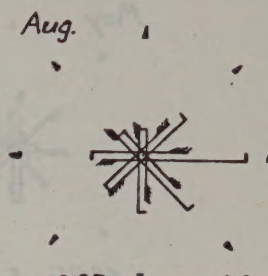
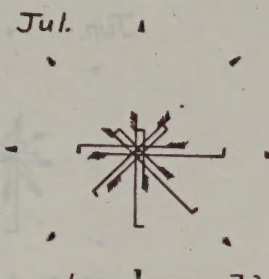
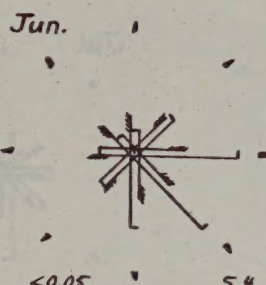
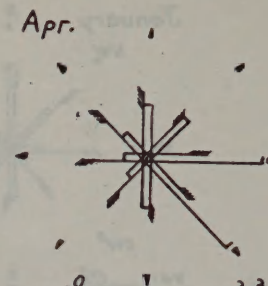
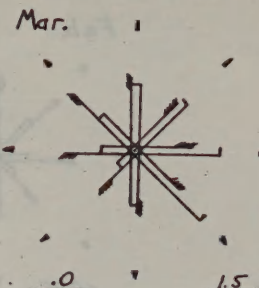
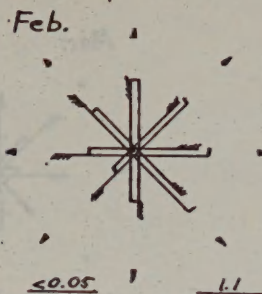
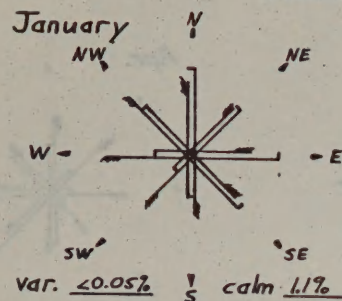
Scale 0 5 10 15 20 25

mean speed, knots
pct. frequency

var = variable

* Data on this page based on 81,091 observations made over the years 1865-1968 from U.S. Naval Weather Service Command 1970, b.

Monthly wind patterns observed over the Gulf of Mexico in an area bounded by 27° N. to the coastline and 86-89° W. (Pensacola Locality)*



Legend:

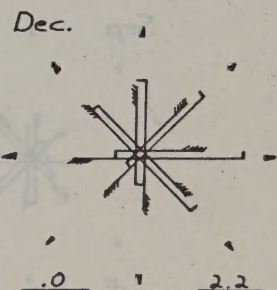
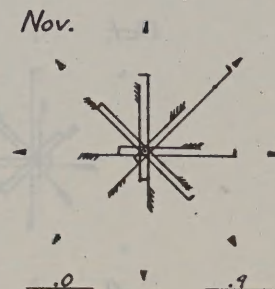
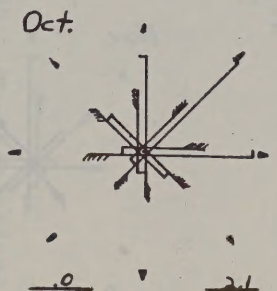
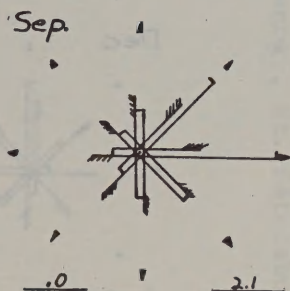
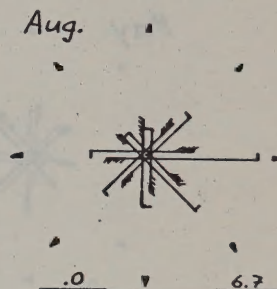
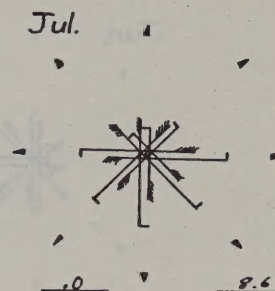
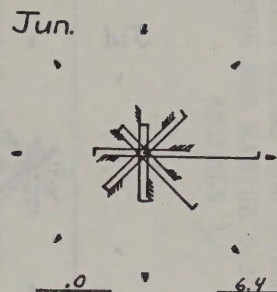
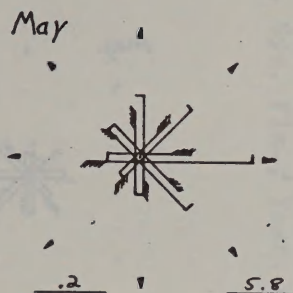
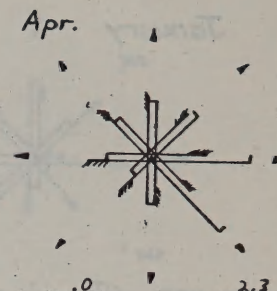
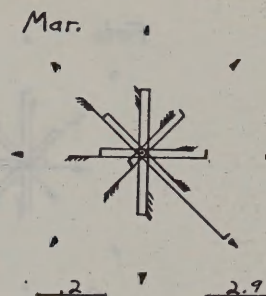
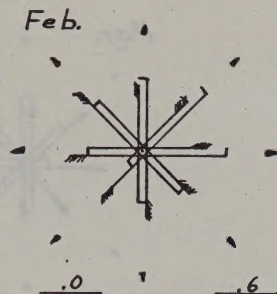
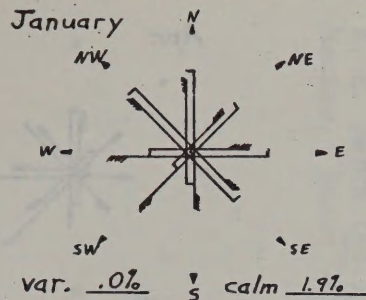
Scale 0 5 10 15 20 25

mean speed, knots
per frequency

var. = variable

*Data on this page is based on 63,963 observations made over the years 1858-1968 from U.S. Naval Weather Service Command, 1970, a.

Monthly wind patterns observed over the Gulf of Mexico
in an area bounded by 27° N. to the coastline and the coastline
to 86° W. (Apalachicola Locality)*



Legend :

Scale 0 5 10 15 20

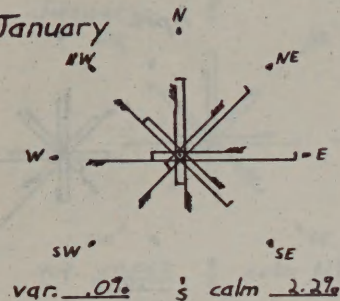
mean speed, knots
pct. frequency

var = variable

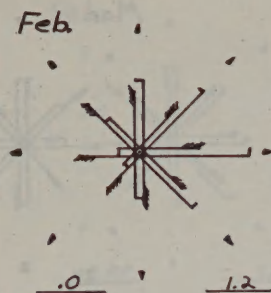
*Data on this page is based on 7,273 observations made
over the years 1881-1968 from U.S. Naval Weather Service
Command, 1970, n.

Monthly wind patterns observed over the Gulf of Mexico
in an area bounded by 25°-27° N. and 81°-84° W.
(Fort Myers Locality)*

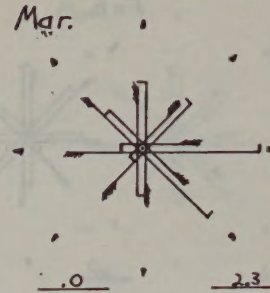
January



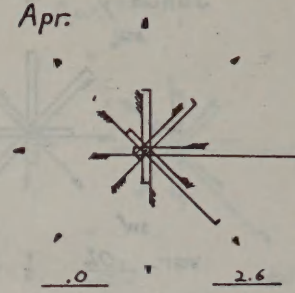
Feb.



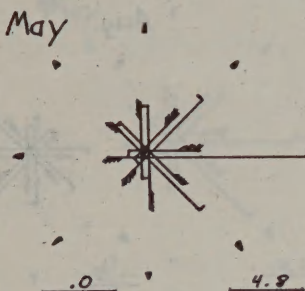
Mar.



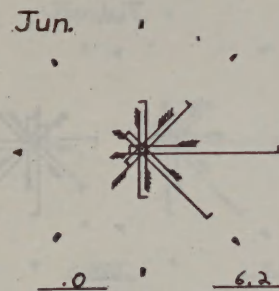
Apr.



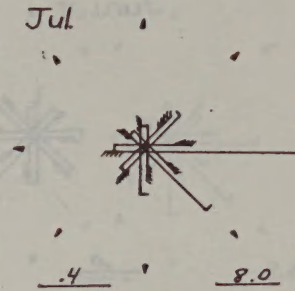
May



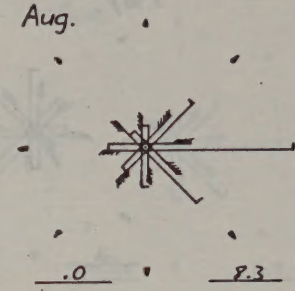
Jun.



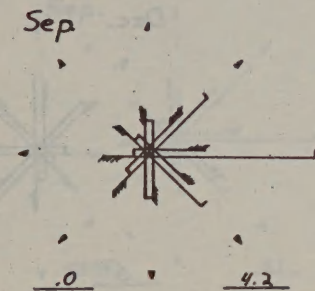
Jul.



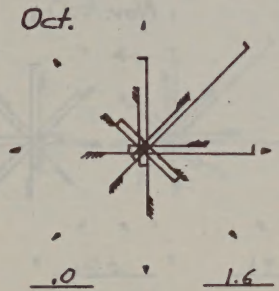
Aug.



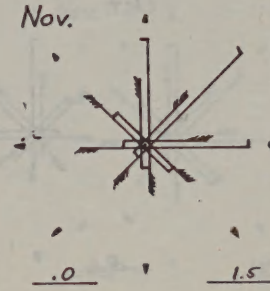
Sep.



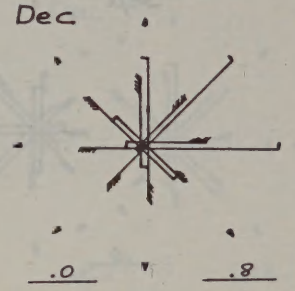
Oct.



Nov.



Dec.



Legend

Scale 0 5 10 15 20 25

mean speed, knots
per frequency

var = variable

* Data on this page is based on 9,360 observations made over the years 18-67-1968 from U.S. Naval Weather Service Command, 1970, a.

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ATTACHMENT G

COMMON NAMES AND SCIENTIFIC
NAMES FOR MARINE BENTHIC
ANIMALS 1/

-
- 1/ From Collard, S. B. and C. N. D'Asaro, 1973. The biological environment--benthic invertebrates of the eastern Gulf of Mexico. P. III G-1 to III G-28. In. J. I. Jones, R. E. Ring, M. O. Rinkel, and R. E. Smith (ed.) A summary of knowledge of the eastern Gulf of Mexico. State Univ. Sys. Fla., Inst. Oceanog., St. Petersburg.

Phylum Porifera

SPONGES

<u>Axinella polycapella</u>	-
<u>Callyspongia vaginalis</u>	Pipe Organ Sponge
<u>Cliona caribboea</u>	Boring Sponge
<u>C. celata</u>	Boring Sponge
<u>C. vastifica</u>	Boring Sponge
<u>Dysidea fragilis</u>	-
<u>Geodia gibberosa</u>	-
<u>Hippiospongia lachne</u>	Bath Sponge
<u>Ircinia campana</u>	Vase Sponge
<u>I. fasciculata</u>	Garlic Sponge
<u>Microciona prolifera</u>	-
<u>Neopetrosia longleyi</u>	-
<u>Speciospongia vesparia</u>	Loggerhead Sponge
<u>Tedania ignis</u>	Fire Sponge

PHYLUM COELENTERATA

<u>Acanella eburnia</u>	Soft Coral
<u>Actinauge longicornis</u>	-
<u>Aiptasia pallida</u>	Anemone
<u>Astrangia solitaria</u>	Solitary Coral
<u>Bebryce grandis</u>	Soft Coral
<u>Bunodosoma cavernata</u>	Anemone
<u>Caligorgia verticillata</u>	Soft Coral
<u>Cerianthopsis americanus</u>	Cerianthid
<u>Chrysogorgia elegans</u>	Soft Coral
<u>Cladocarpus flexilis</u>	Hydroid
<u>Deltocyathus italicus</u>	Coral
<u>Desmophyllum cristagalli</u>	Coral
<u>Eudendrium carneum</u>	Hydroid
<u>Hydractinia echinata</u>	Hydroid
<u>Leptogorgia setacea</u>	Soft Coral
<u>L. virgulata</u>	Soft Coral
<u>Madrepora oculata</u>	Coral
<u>Millepora alcicornis</u>	Stinging Coral
<u>Muricea laxa</u>	Soft Coral
<u>M. pendula</u>	Soft Coral
<u>Oculina diffusa</u>	Coral
<u>Pennaria tiarella</u>	Hydroid
<u>Phyllangia americana</u>	Coral
<u>Renilla mulleri</u>	Sea Pansy
<u>Scirpearia grandis</u>	Soft Coral
<u>S. funiculina</u>	Soft Coral
<u>Scleracis guadalupensis</u>	Soft Coral
<u>Siderastraea siderea</u>	Coral
<u>Thesea grandiflora</u>	Soft Coral
<u>T. plana</u>	Soft Coral
<u>Trichogorgia viola</u>	Soft Coral
<u>Tubularia crocea</u>	Hydroid
<u>Villogorgia nigrescens</u>	Soft Coral

PHYLUM ANNELIDA

CLASS POLYCHAETA

SEGMENTED WORMS

<u>Amphitrite ornata</u>	-
<u>Arenicola cristata</u>	Lugworm

Axiiothella mucosa
Branchioma nigromarginata
Chaetopterus variopedatus
Cistenides gouldii
Diopatra cupres
Hydroides hexagonus
Neanthes succinea
Onuphis magna
Polydora websteri

Bamboo Worm

-
-
-
-
-
-
-
-

PHYLUM MOLLUSCA

CLASS AMPHINEURA

Ischnochiton papillosus

Mesh-pitted Chiton

CLASS GASTROPODA

SNAILS

Anachis avara
A. obesa
Batillaria minima
Bittium varius
Bursatella leachi plei
Busycon spiratum
Caecum nitidum
C. pulchellum
Cantharus tinctus
Cassis madagascariensis
Cerithium floridanum
C. muscarum
C. variable
Conus stearnsi
C. sozoni
Crepidula convexa
C. fornicata
C. plana
Fasciolaria hunteria
F. tulipa
Ficus communis
Fusinus couei
Gaza superba
Haminoea antillarum
H. elegans
H. succinea
Littorina angulifera
L. irrorota
L. ziczac
Melampus coffeus
M. bidentatus
Melongena corona
Mitrella lunata
Modulus modulus
Murex beaulti
M. florifer
M. fulvesceus
Nassarius vibex
Neritina reclinata
N. virginea
Odostomia impressa

Greedy Dove-shell
 Fat Dove-shell
 False Cerith
 Variable Bittium
 Ragged Sea-Hare
 Pear Whelk
 Little Horn Caecum
 -
 Tinted Cantharus
 Emperor Helmet
 Florida Cerith
 Fly-specked Cerith
 Dwarf Cerith
 Stearn's Cone
 Sozon's Cone
 Convex Slipper Shell
 Common Atlantic Slipper-shell
 Eastern White Slipper-shell
 Banded Tulip
 True Tulip
 Common Fig Shell
 Coue's Spindle
 Superb Gaza
 Antillean Paper-Bubble
 Paper-Bubble Shell
 Paper-Bubble Shell
 Augulate Periwinkle
 Marsh Periwinkle
 Zebra Periwinkle
 Salt Marsh Pulmonate
 Pulmonate
 Crown Conch
 Lunar Dove-shell
 Atlantic Modulus
 Beau's Murex
 Lace Murex
 Giant Eastern Murex
 Eastern Nassa
 Olive Nerite
 Virgin Nerite
 Impressed Odostome

Oliva sayana
Petalioconchus irregularis
Phalium granulatum
Polinices duplicatus
Prunum apicinum
Retusa canaliculata
Scapella keineri
S. junonia
Sinum perspectivum
Strombus pugilis
Tegula fasciata
Terebra cinerea
Thais haemastoma floridana
Tonna galea
Turbo castaneus
Urosalpinx tampaensis

Lettered Olive
 Irregular Worm-Shell
 Scotch Bonnet
 Shark Eye
 Common Atlantic Marginella
 Channeled Barrel-Bubble
 Volute
 Junonia Volute
 Common Baby's Ear
 Fighting Conch
 Smooth Atlantic Tegula
 Gray Atlantic Auger
 Florida Rock Shell
 Giant Tun
 Chestnut Turban
 Tampa Drill

CLASS PELECYPODA

BIVALVES

Abra aequalis
Anadara simplex
Anodontia alba
Anomalocardia cuneimeris
Anomia simplex
Amygdalum papyria
Argopecten gibbus
A. irradians concentricus
Atrina serrata
Brachidontes exustus
B. recurvus
Cardiomya gemma
Cardita floridana
Chione cancellata
Codakia orbiculata
Congeria leucophaeta
Corbiculata contracta
Crassostrea virginica
Cryptopleura costata
Cyclinella tenuis
Dinocardium robustum
Diplodonta punctata
Donax variabilis
Dosinia discus
Echinochama cornuta
Isognomen alatus
Laevicardium mortoni
Lima pellucida
Lithophaga aristata
L. bisulcata
Macoma constricta
M. mitchelli
M. tageliformis
Macrocallista nimbosa
Mactra fragilis
M. cuneiformis
Martesia striata
Modiolus demissus
Mulinia lateralis
Nuculana acuta

Common Atlantic abra
 -
 Buttercup Lucina
 Pointed Venus
 Common Jingle Shell
 Paper Mussel
 Sea Scallop
 Atlantic Bay Scallop
 Saw-toothed Pen Shell
 Scorched Mussel
 Hooked Mussel
 Cuspidaria
 Broad-Ribbed Cardita
 Cross-Barred Venus
 Dwarf Tiger Lucina
 Conrad's False Mursel
 Contracted Corbula
 Eastern Oyster
 -
 -
 Giant Atlantic Cockle
 Common Atlantic Diplodon
 Coquina Shell
 Disk Dosinia
 Florida Spiny Jewel Box
 Flat Tree Oyster
 Morton's Egg Cockle
 Antillean Lima
 Scissor Data Mussel
 Mahogany Data Mussel
 Constricted Macoma
 -
 -
 Sunray Venus
 Fragile Atlantic Mactra
 Wedge-Shaded Wood Borer
 Striate Wood Borer
 Atlantic Ribbed Mussel
 -
 Nut Clam

N. concentrica
Ostrea equestris
O. frons
Pandora trilineata
Periploma fragile
Pinna carnea
Pitar cordata
Polymesoda caroliniana
Polystira albida
Rangia cuneata
Semele proficua
Spondylus americanus
Tagelus divisus
T. plebius
Tellina alternata
T. lineata
T. promera
T. similis
T. tampaensis
T. versicolor
Teredo navalis

Concentric Nut Clam
 Crested Oyster
 Coon Oyster
 Say's Pandora
 Fragile Spoon Clam
 Amber Pen Shell
 Schwengel's Venus
 Carolina Marsh Clam
 White Giant Turret
 Common Rangia
 White Atlantic Semele
 Atlantic Thorny Oyster
 Purplish Tagelus
 Stout Tagelus
 Alternate Tellin
 Rose Petal Tellin
 Promera Tellin
 Candy Stick Tellin
 Tampa Tellin
 DeKay's Dwarf Tellin
 Shipworm

PHYLUM ARTHROPODA

CLASS MEROSTOMATA

Horeshoe or King Crab

CLASS CRUSTACEA

SHRIMPS AND CRABS

Acanthocarpus alexandri
Alpheus heterochaelis
Aratus pisonii
Arenaeus cribrarius
Balanus amphitrite
B. declivis
B. eburneus
B. improvisus
Bathyplox typhla
Benthescymus cereus
B. bartletti
Calappa angusta
C. flammea
Callianassa islagrande
C. major
Cardisoma quahumi
Chiridotea caeca
Chthamalus fragilis
Clibanarius vittatus
Dromidia antillensis
Emerita talpoida
Eurypanopeus depressus
Gonodactylus townsendi
Haustorius sp
Hepatus epheliticus
Hymenopenaeus robustus
H. tropicalis
Iridopagurus dispar
Lepidopa benedicti
Ligyda baudiniana
L. exotica

-
 Big-Clawed Snapping Shrimp
 Mangrove Crab
 Beach Crab
 Barnacle
 -
 Ivory Barnacle
 Barnacle
 Deep Water Crab
 Deep Water Shrimp
 Deep Water Shrimp
 Deep Water Crab
 Flame Crab
 Ghost Shrimp
 Ghost Shrimp
 Land Crab
 Isopod
 Barnacle
 Hermit Crab
 Sponge Crab
 Beach Flea
 Mud Crab
 Mantis Shrimp
 Amphipod
 Crab
 Deep Water Shrimp
 Deep Water Shrimp
 Hermit Crab
 Mole Crab
 Isopod
 Isopod

<u>L. olfersii</u>	Isopod
<u>Lysiosquilla excavatrix</u>	Mantis Shrimp
<u>Macrobrachium ohione</u>	Fresh Water Shrimp
<u>Menippe mercenaria</u>	Stone Crab
<u>Mithrax spinosissimus</u>	Spider Crab
<u>Munida forceps</u>	Crab
<u>M. irrassa</u>	Crab
<u>Neopanope texana</u>	Mud Crab
<u>Ocypode albicans</u>	Beach Crab
<u>Orshestia grillus</u>	Beach Hopper
<u>Ovalipes quadripennis</u>	Beach Crab
<u>Pachygrapsus transversus</u>	Crab
<u>Pagurus annulipes</u>	Hermit Crab
<u>P. bonairensis</u>	Hermit Crab
<u>P. longicarpus</u>	Hermit Crab
<u>Palaemonetes intermedius</u>	Shrimp
<u>P. pugio</u>	Shrimp
<u>P. vulgaris</u>	Shrimp
<u>Panulirus argus</u>	Spiny Lobster
<u>Persephona punctata</u>	Crab
<u>Petrochirus diogenes</u>	Hermit Crab
<u>Petrolisthes armatus</u>	Porcelain Crab
<u>P. galathinus</u>	Porcelain Crab
<u>Pilumnus sayi</u>	Crab
<u>Porcellana sigsbeiana</u>	Porcelain Crab
<u>Portunus gibbesii</u>	Swimming Crab
<u>P. spinicarpus</u>	Swimming Crab
<u>Procambarus alleni</u>	Swamp Crayfish
<u>P. blandingi</u>	White River Crayfish
<u>Pylopagurus corallinus</u>	Deep Water Hermit Crab
<u>Ranilia muricata</u>	Crab
<u>Raninoides constricta</u>	Crab
<u>Sesarma curacaoense</u>	Crab
<u>S. reticulatum</u>	Crab
<u>Solenocera vioscai</u>	-
<u>Stenorynchus seticornis</u>	Arrow Crab
<u>Talorchestia longicornis</u>	Beach Hopper
<u>Thor floridanus</u>	Shrimp
<u>Tozeuma carolinensis</u>	Bayonet Shrimp
<u>Uca minax</u>	Fiddler Crab
<u>U. pugilator</u>	Fiddler Crab
<u>U. pugnax</u>	Fiddler Crab
<u>U. rapax</u>	Fiddler Crab

PHYLUM ECHINODERMATA

CLASS ASTEROIDEA

STARFISH

<u>Astropecten articulatus</u>	Starfish
<u>Echinaster sentus</u>	Starfish
<u>Goniaster tessellatus</u>	Starfish
<u>Luidia clathrata</u>	Starfish
<u>Nymphaster arenatus</u>	Starfish
<u>Plinthaster dentatus</u>	Starfish

CLASS ECHINOIDEA

SEA URCHINS

<u>Arbacia punctulata</u>	Sea Urchins
<u>Calocidaris micans</u>	Sea Urchins

Clypeaster subdepressus
Encope michelini
Eucidaris tribuloides
Lytechinus variegatus
Mellita quinquiesperforata
Moira atropos
Plagiobrissus grandis
Stylocidaris assinis

Cake Urchin
 Large Sand Dollar
 Slate Pencil Urchin
 -
 Small Sand Dollar
 Heart Urchin
 Large Heart Urchin
 -

CLASS HOLOTHUROIDEA

Holothuria floridana

Sea Cucumbers

CLASS OPHIUROIDEA

BRITTLE STARS

Amphipolis gracillima
Ophioderma brevispinum
Ophiophis elegans
Ophiophragmus filogranus
Ophiothrix angulata

Brittle Star
 Brittle Star
 Brittle Star
 Brittle Star
 Brittle Star

MISCELLANEOUS PHyla

Stylochus frontalis
Cerebratulus lacteus
Batillipes mirus
Phoronis architecta
Dallina floridana
Cryptopora gnomon
Bugula sp.
Membranipora sp.
Zoobotryon verticillatum
Styella partita
S. plicata
Molgula manhattensis

Flatworm (oyster worm)
 Ribbon Worm
 Tardigrade
 -
 Lamp Shell
 Lamp Shell
 Bryozoan
 Bryozoan
 Bryozoan
 Sea Squirt
 Sea Squirt
 Sea Squirt

ATTACHMENT H

POPULATION, EMPLOYMENT, PERSONAL INCOME, AND
EARNINGS BY INDUSTRY, HISTORICAL AND PROJECTED

BEA ECONOMIC AREAS 34, 37, 38, 39, and 137

TABLE 1. POPULATION, EMPLOYMENT, PERSONAL INCOME, AND EARNINGS BY INDUSTRY, HISTORICAL AND PROJECTED, SELECTED YEARS, 1950 - 2020

	1950	1959	1962	1968	1969	1980	1990	2000	2010	2020
POPULATION, MIDYEAR										
PER CAPITA INCOME (1967\$)	670,629	858,199	949,241	1,029,870	1,049,110	1,225,100	1,429,300	1,632,200	1,871,100	2,140,500
PER CAPITA INCOME RELATIVE (US=1.00)	1.548	2.009	2.061	2.739	2.865	4.143	5.485	7.548	10.118	13.476
	.75	.82	.80	.83	.84	.87	.89	.91	.93	.94
TOTAL EMPLOYMENT	246,838	325,662	329,492			486,100	557,900	652,900	754,700	865,000
EMPLOYMENT/POPULATION RATIO	.37	.38	.35			.40	.39	.40	.40	.40
EARNINGS PER WORKER (1967\$)	3,411	4,234	4,670			8,249	10,984	14,617	19,282	25,469
EARNINGS PER WORKER RELATIVE (US=1.00)	.76	.79	.81			.88	.90	.92	.94	.96
IN THOUSANDS OF 1967 \$										
TOTAL PERSONAL INCOME	1,038,390	1,724,076	1,956,452	2,820,593	3,005,304	5,075,800	7,839,200	12,319,900	18,932,800	28,845,000
TOTAL EARNINGS	842,060	1,378,830	1,538,678	2,279,237	2,422,894	4,009,600	6,128,300	9,544,300	14,554,300	22,032,400
AGRICULTURE, FORESTRY & FISHERIES	64,147	55,362	58,191	83,578	85,065					
AGRICULTURE	50,849	45,770	46,840	74,640	76,856	99,500	120,000	144,000	187,900	250,700
FORESTRY & FISHERIES	13,297	9,590	11,355	8,939	8,207	86,500	102,700	120,900	157,300	211,000
MINING						13,000	17,200	23,000	30,600	39,700
METAL	5,411	7,550	6,246	(D)	(D)					
CRUDE PETROLEUM & NATURAL GAS	(D)	(D)	(D)	(D)	(C)	16,500	22,200	30,800	42,300	58,800
NONMETALLIC, EXCEPT FUELS	(D)	(D)	(D)	(D)	(C)	3,600	4,500	5,600	7,100	9,000
CONTRACT CONSTRUCTION	3,557	2,837	3,085	18	21	(S)	(S)	(S)	(S)	(S)
	65,618	106,066	92,949	8,110	8,390	12,800	17,600	25,100	35,100	49,700
MANUFACTURING				(D)	(D)					
FOOD & KINDRED PRODUCTS	115,286	208,696	246,461	337,702	361,893	244,400	372,000	577,000	876,100	1,316,600
TEXTILE MILL PRODUCTS	17,847	32,454	40,165	48,377	52,510	574,600	846,000	1,278,800	1,903,800	2,839,600
APPAREL & OTHER FABRIC PRODUCTS	141	1,488	1,299	(D)	(D)	72,800	94,100	124,000	161,300	211,600
LUMBER PRODUCTS & FURNITURE	2,076	2,354	3,810	(D)	(D)	4,200	6,200	9,200	13,200	19,200
PAPER & ALLIED PRODUCTS	26,415	26,574	24,502	6,330	(D)	11,000	15,900	23,400	33,600	48,400
PRINTING & PUBLISHING	23,216	56,440	64,075	29,919	30,306	40,500	51,600	68,100	89,200	118,300
CHEMICALS & ALLIED PRODUCTS	8,320	9,716	15,040	82,667	87,523	138,200	203,500	307,300	456,300	676,800
PETROLEUM REFINING	10,103	15,329	19,231	19,586	19,688	32,600	50,300	78,900	121,800	186,700
PRIMARY METALS	141	1,104	845	2,708	21,717	31,800	43,800	62,100	94,400	121,100
FABRICATED METALS & ORDNANCE	(D)	(D)	(D)	4,489	3,172	4,600	6,500	9,400	13,000	18,400
MACHINERY, EXCLUDING ELECTRICAL	2,196	10,142	11,750	19,740	4,568	6,900	10,100	14,700	20,700	29,500
ELECTRICAL MACHINERY & SUPPLIES		3,829	5,419	9,591	24,821	43,300	67,600	107,100	165,200	252,700
TOTAL MACHINERY (1950 ONLY)		(D)	(D)	(D)	12,407	21,000	33,100	53,100	82,400	128,400
MOTOR VEHICLES & EQUIPMENT	1,977				7,816	16,600	30,500	55,900	98,600	169,600
TRANS. EQUIP., EXCL. MTR. VEHs.	708	632	529	544	562	700	1,000	1,500	2,100	3,000
OTHER MANUFACTURING	4,122	16,128	24,094	46,013	49,375	86,300	134,500	213,100	330,500	509,300
	16,552	24,643	27,309	36,520	37,950	63,100	96,500	150,200	228,500	346,100
TRANS., COMM. & PUBLIC UTILITIES										
RAILROAD TRANSPORTATION	91,025	134,168	147,055	179,781	187,515	278,800	397,500	583,100	844,800	1,229,400
TRUCKING & WAREHOUSING	51,782	63,623	62,956	61,567	62,396	79,300	94,500	113,100	130,600	150,500
OTHER TRANSPORTATION & SERVICES	9,212	21,201	26,703	36,854	37,666	60,600	91,100	140,000	211,300	317,300
COMMUNICATIONS	15,624	23,177	23,817	30,437	30,410	49,200	74,300	114,500	173,100	260,200
UTILITIES (ELEC., GAS, SANITARY)	11,989	22,192	28,789	43,348	48,675	75,600	115,600	180,300	275,000	415,600
	2,419	3,970	4,791	7,580	8,371	14,000	21,900	34,900	54,400	85,300
WHOLESALE & RETAIL TRADE	175,506	280,690	314,090	450,345	461,825	790,200	1,191,300	1,844,800	2,792,700	4,193,300
FINANCE, INSURANCE & REAL ESTATE	62,250	113,714	123,510	161,180	172,245	273,600	409,500	626,300	938,500	1,397,600
SERVICES										
LODGING PLACES & PERSONAL SERV.	103,547	188,974	203,508	290,493	315,380	574,100	939,800	1,551,600	2,481,800	3,901,100
BUSINESS & REPAIR SERVICES	21,888	31,891	33,728	47,111	49,335	80,400	120,800	186,000	281,500	423,300
AMUSEMENT & RECREATION SERVICES	9,483	21,838	23,624	43,849	48,565	90,900	153,600	259,300	421,300	671,100
PRIVATE HOUSEHOLDS	6,671	9,205	9,833	13,986	14,232	22,700	34,000	51,800	77,300	114,400
PROFESSIONAL SERVICES	30,108	37,794	38,910	36,428	36,126	46,100	55,500	67,600	80,500	96,700
	35,398	88,246	97,412	149,113	167,122	333,800	575,800	986,800	1,621,000	2,595,400
GOVERNMENT										
CIVILIAN GOVERNMENT	159,273	283,615	346,666	638,237	674,391	1,157,600	1,829,500	2,907,700	4,486,100	6,844,600
FEDERAL GOVERNMENT	120,663	216,112	276,497	474,147	510,090	955,700	1,567,600	2,567,300	4,065,700	6,272,500
STATE & LOCAL GOVERNMENT	53,917	81,865	100,747	160,970	166,721	275,900	399,700	578,300	800,200	1,072,700
ARMED FORCES	66,751	134,249	175,749	313,175	343,369	679,800	1,167,800	1,969,000	3,245,500	5,199,800
	38,608	67,503	70,170	164,090	164,302	201,800	261,900	340,300	440,300	572,000

POPULATION, APRIL 1, 1970 1,091,274

TABLE 2. POPULATION, AND EMPLOYMENT BY INDUSTRY, HISTORICAL AND PROJECTED.
SELECTED YEARS, 1940-2020

	1940	1950	1960	1966	1980	1990	2000	2010	2020
POPULATION	515,229	662,337	882,660	1,009,112	1,225,100	1,429,300	1,632,200	1,871,100	2,140,500
EMPLOYMENT/POPULATION RATIO	.35	.37	.37	.38	.40	.39	.40	.40	.40
TOTAL EMPLOYMENT	178,959	246,838	325,662	380,105	486,100	557,900	652,900	754,700	865,000
AGRICULTURE, FORESTRY & FISHERIES	37,029	33,408	20,860	21,283	16,800	15,400	14,100	13,800	13,800
AGRICULTURE	29,960	28,195	17,933	17,372	12,600	11,100	9,900	9,700	9,600
FORESTRY & FISHERIES	7,069	5,213	2,927	3,911	4,200	4,200	4,200	4,100	4,100
MINING	470	774	1,154	1,061	1,200	1,400	1,500	1,700	1,800
CONTRACT CONSTRUCTION	9,791	17,994	24,598	26,125	35,400	41,100	48,400	55,900	63,800
MANUFACTURING	25,626	33,582	48,025	59,318	73,000	82,000	93,600	105,700	118,600
FOOD & KINDRED PRODUCTS	3,628	4,720	8,347	9,209	10,300	10,300	10,300	10,200	10,100
TEXTILE MILL PRODUCTS	132	267	486	760	800	800	900	900	900
APPAREL & OTHER FABRIC PRODUCTS	185	573	1,059	1,833	2,000	2,100	2,200	2,300	2,300
PRINTING & PUBLISHING	1,424	2,121	3,191	4,934	6,200	7,100	8,300	9,500	10,900
CHEMICALS & ALLIED PRODUCTS	2,672	2,577	3,150	3,771	4,200	4,400	4,700	5,000	5,200
LUMBER PRODUCTS & FURNITURE	10,611	10,892	8,238	7,525	6,900	6,700	6,500	6,300	6,200
MACHINERY, ALL	446	981	2,556	4,152	6,000	7,500	9,400	11,500	13,700
MACHINERY, EXCL. ELECTRICAL		783	1,245	2,362	3,200	3,900	4,800	5,800	6,800
ELEC. MACHINERY & SUPPLIES		198	1,311	1,790	2,700	3,500	4,500	5,700	6,900
TRANSPORTATION EQUIPMENT	610	1,855	3,726	7,015	10,100	12,000	14,400	17,000	19,700
MOTOR VEHICLES & EQUIPMENT	233	391	327	290	200	200	200	200	200
TRANS. EQUIP., EX. MTR. VEHs.	377	1,464	3,399	6,725	9,800	11,800	14,200	16,700	19,400
OTHER MANUFACTURING	5,918	9,596	17,272	20,119	26,200	30,700	36,500	42,600	49,200
PAPER & ALLIED PRODUCTS		4,481	8,721	9,496	12,300	14,400	17,200	20,000	23,100
PETROLEUM REFINING		80	333	441	500	500	600	700	700
PRIMARY METALS		298	654	1,350	1,400	1,400	1,500	1,600	1,600
FABRICATED METALS & ORDNANCE		682	1,806	2,254	3,400	4,400	5,700	7,100	8,600
MISCELLANEOUS MANUFACTURING		4,055	5,758	6,578	8,400	9,700	11,400	13,100	15,000
TRANS., COMM., & PUBLIC UTILITIES	17,379	24,159	26,310	29,172	33,800	37,200	42,200	47,400	53,100
TRANSPORTATION	14,346	18,605	17,980	18,553	20,400	22,500	25,100	27,700	30,400
RAILROAD TRANSPORTATION	8,272	10,805	8,572	7,534	6,500	6,200	6,000	5,600	5,300
TRUCKING & WAREHOUSING	1,868	2,629	4,356	6,102	7,400	8,600	10,200	11,800	13,400
OTHER TRANSPORTATION SERVICES	4,206	5,171	5,052	4,917	6,400	7,500	8,900	10,200	11,600
COMMUNICATIONS	1,648	3,127	4,497	4,756	6,700	8,100	10,000	12,000	14,200
UTILITIES (ELEC., GAS, SANITARY)	1,385	2,427	3,833	5,863	6,600	6,600	7,000	7,500	8,100
WHOLESALE & RETAIL TRADE	32,325	51,318	67,544	77,680	100,000	114,500	133,800	153,800	175,100
FINANCE, INSURANCE & REAL ESTATE	4,842	8,383	17,602	21,953	28,600	32,700	38,000	43,500	49,200
SERVICES	45,604	54,692	79,652	95,236	133,900	162,300	198,800	238,400	281,200
BUSINESS SERVICES	34,238	34,599	42,128	44,983	51,900	55,300	60,400	65,700	71,500
LODGING PLACES & PERS. SERV.	9,808	12,216	13,984	15,120	16,800	17,900	19,600	21,300	23,200
BUSINESS & REPAIR SERVICES	3,013	5,277	7,460	9,986	16,500	20,400	25,200	30,200	35,400
AMUSEMENT & REC. SERVICES	1,473	2,245	2,956	3,184	3,400	3,800	4,500	5,100	5,700
PRIVATE HOUSEHOLDS	19,944	14,861	17,728	16,693	15,100	13,000	11,000	9,000	7,100
PROFESSIONAL SERVICES	11,366	20,093	37,524	50,253	81,900	106,900	138,400	172,700	209,200
GOVERNMENT	5,893	22,528	39,917	48,277	62,900	71,000	82,000	94,200	108,000
CIVILIAN GOVERNMENT	5,883	14,190	19,582	26,989	42,400	50,500	61,500	73,700	87,400
ARMED FORCES	10	8,338	20,335	21,288	20,500	20,500	20,500	20,500	20,500

Reproduced from: U.S. Water Resources Council, 1972 OBERS projections; p.73

TABLE 1. POPULATION, EMPLOYMENT, PERSONAL INCOME, AND EARNINGS BY INDUSTRY, HISTORICAL AND PROJECTED, SELECTED YEARS, 1950 - 2020

	1950	1959	1962	1968	1969	1980	1990	2000	2010	2020
POPULATION, MIDEAR	706,870	1,261,521	1,424,689	1,705,728	1,771,691	2,130,100	2,563,000	3,024,400	3,567,900	4,182,700
PER CAPITA INCOME (1967\$)	1,753	2,105	2,134	2,682	2,850	3,807	4,975	6,770	9,007	11,930
PER CAPITA INCOME RELATIVE (US=1.00)	.85	.86	.83	.81	.83	.80	.81	.82	.83	.84
TOTAL EMPLOYMENT	256,872	441,992	478,291			747,700	894,300	1,087,300	1,298,200	1,528,600
EMPLOYMENT/POPULATION RATIO	.36	.35	.34			.35	.35	.36	.36	.37
EARNINGS PER WORKER (1967\$)	3,699	4,471	4,480			7,680	10,169	13,517	17,863	23,670
EARNINGS PER WORKER RELATIVE (US=1.00)	.82	.83	.78			.82	.84	.85	.87	.89
IN THOUSANDS OF 1967 \$										
TOTAL PERSONAL INCOME	1,239,004	2,656,029	3,040,092	4,575,050	5,048,577	8,109,700	12,751,900	20,476,700	32,134,700	49,901,100
TOTAL EARNINGS	950,158	1,976,220	2,142,856	3,122,742	3,477,439	5,742,500	9,094,700	14,697,300	23,190,900	36,184,200
AGRICULTURE, FORESTRY & FISHERIES	154,017	227,838	186,812	201,345	235,856	222,200	246,800	293,200	382,200	511,700
AGRICULTURE	148,780	218,868	177,423	193,369	228,754	210,800	231,600	272,600	354,500	475,600
FORESTRY & FISHERIES	5,239	8,971	9,389	7,976	7,099	11,400	15,200	20,600	27,600	36,100
MINING	(D)	(D)	(D)	(D)	30,520	44,000	57,700	78,500	105,700	144,300
METAL	(D)	(D)	(D)	(D)	(D)	(S)	(S)	(S)	(S)	(S)
CRUDE PETROLEUM & NATURAL GAS	41	0	145	162	(D)	(S)	(S)	(S)	(S)	(S)
NONMETALLIC, EXCEPT FUELS	20,652	32,147	32,156	34,681	30,292	43,700	57,300	78,100	105,100	143,600
CONTRACT CONSTRUCTION	79,504	207,642	182,508	252,863	314,784	485,000	743,500	1,165,200	1,786,900	2,706,700
MANUFACTURING	117,278	267,639	332,996	502,802	547,501	925,100	1,444,000	2,295,700	3,567,500	5,520,100
FOOD & KINDRED PRODUCTS	45,082	63,625	80,757	102,705	110,461	158,400	220,700	313,200	435,900	611,000
TEXTILE MILL PRODUCTS	267	540	414	1,534	1,183	1,900	2,700	4,000	5,600	8,000
APPAREL & OTHER FABRIC PRODUCTS	(D)	(D)	(D)	10,635	11,893	19,500	28,600	42,600	62,100	90,400
LUMBER PRODUCTS & FURNITURE	11,695	13,801	13,344	20,058	21,662	30,600	40,700	55,800	75,700	103,600
PAPER & ALLIED PRODUCTS	2,711	4,102	5,164	12,495	14,034	24,100	38,000	61,000	95,700	149,400
PRINTING & PUBLISHING	10,346	20,960	23,942	32,029	36,679	59,100	93,300	149,700	234,600	364,900
CHEMICALS & ALLIED PRODUCTS	9,221	30,563	37,571	59,023	55,550	101,200	165,600	274,400	441,300	701,600
PETROLEUM REFINING	(D)	(D)	(D)	986	1,171	1,700	2,400	3,400	4,700	6,600
PRIMARY METALS	597	4,069	4,008	7,542	8,081	11,800	16,300	22,800	31,000	42,300
FABRICATED METALS & ORDNANCE	7,406	30,932	32,586	44,795	54,999	96,800	151,300	241,200	374,400	574,800
MACHINERY, EXCLUDING ELECTRICAL		10,213	14,866	26,522	29,568	54,500	91,700	155,200	255,200	415,400
ELECTRICAL MACHINERY & SUPPLIES		33,549	60,058	85,661	87,566	165,900	279,000	470,900	767,800	1,235,200
TOTAL MACHINERY (1950 ONLY)	4,061									
MOTOR VEHICLES & EQUIPMENT	399	1,229	2,543	4,891	2,409	4,900	9,100	17,400	31,100	55,100
TRANS., EQUIP., EXCL. MTR. VEH.	312	4,290	8,890	29,298	38,537	67,800	105,800	168,400	261,600	404,300
OTHER MANUFACTURING	23,734	45,527	43,585	64,626	73,706	126,300	198,100	315,000	490,200	756,600
TRANS., COMM. & PUBLIC UTILITIES	67,051	136,189	151,042	211,826	231,582	360,900	554,300	870,100	1,339,200	2,050,600
RAILROAD TRANSPORTATION	24,657	31,163	31,001	27,669	(D)	36,400	45,000	55,800	66,500	78,400
TRUCKING & WAREHOUSING	6,934	19,405	23,254	36,795	41,007	67,600	107,700	174,900	277,900	437,100
OTHER TRANSPORTATION & SERVICES	15,175	27,397	26,781	41,192	42,166	68,100	106,900	171,300	268,500	416,800
COMMUNICATIONS	10,267	34,201	34,053	56,337	66,878	101,600	159,900	255,700	398,700	614,800
UTILITIES (ELEC., GAS, SANITARY)	10,016	26,024	35,956	49,833	(D)	87,000	134,700	212,100	327,500	503,300
WHOLESALE & RETAIL TRADE	223,980	414,533	468,222	670,150	731,690	1,202,400	1,849,000	2,910,500	4,473,400	6,812,300
FINANCE, INSURANCE & REAL ESTATE	(D)	(D)	(D)	(D)	243,787	411,300	676,800	1,128,500	1,828,400	2,924,400
SERVICES	134,530	311,178	350,366	535,012	610,690	1,101,000	1,845,700	3,116,500	5,082,000	8,115,600
LODGING PLACES & PERSONAL SERV.	28,795	50,395	55,243	84,969	92,890	153,400	242,500	390,300	614,200	958,800
BUSINESS & REPAIR SERVICES	13,673	36,866	43,985	74,403	87,619	160,000	274,900	473,400	784,100	1,267,200
AMUSEMENT & RECREATION SERVICES	9,080	14,932	20,501	29,562	33,441	56,200	93,300	157,100	257,200	415,800
PRIVATE HOUSEHOLDS	36,187	52,054	52,834	46,612	46,180	59,200	74,100	94,000	116,300	143,900
PROFESSIONAL SERVICES	46,797	156,933	177,805	299,465	350,561	672,000	1,160,800	2,001,600	3,310,000	5,329,600
GOVERNMENT	108,521	258,934	297,148	499,360	531,034	990,100	1,676,400	2,838,700	4,625,200	7,398,000
CIVILIAN GOVERNMENT	82,501	191,631	246,373	422,255	455,726	897,600	1,556,300	2,682,700	4,423,300	7,135,700
FEDERAL GOVERNMENT	23,597	44,520	51,436	82,242	85,857	153,300	246,300	392,000	592,400	859,500
STATE & LOCAL GOVERNMENT	58,900	147,107	194,937	340,014	369,872	744,300	1,309,900	2,290,600	3,830,900	6,276,100
ARMED FORCES	26,018	67,307	50,775	77,105	75,304	92,500	120,000	156,000	201,800	262,200

POPULATION, APRIL 1, 1970 1,797,770

TABLE 2. POPULATION, AND EMPLOYMENT BY INDUSTRY, HISTORICAL AND PROJECTED,
SELECTED YEARS, 1940-2020

	1940	1950	1960	1966	1980	1990	2000	2010	2020
POPULATION	479,786 .36	697,133 .37	1,299,190 .34	1,604,996 .34	2,130,100 .35	2,563,000 .35	3,024,400 .36	3,567,900 .36	4,182,700 .37
EMPLOYMENT/POPULATION RATIO									
TOTAL EMPLOYMENT	173,013	256,872	441,992	538,741	747,700	894,300	1,087,300	1,298,200	1,528,600
AGRICULTURE, FORESTRY & FISHERIES	29,378	34,037	32,702	32,978	25,000	22,700	20,600	20,200	20,200
AGRICULTURE	27,449	31,783	30,824	30,597	22,300	19,900	17,700	17,300	17,200
FORESTRY & FISHERIES	1,929	2,254	1,878	2,381	2,700	2,800	2,800	2,900	2,900
MINING	1,769	3,838	5,559	5,165	5,100	5,100	5,000	5,000	4,900
CONTRACT CONSTRUCTION	9,264	22,585	47,641	50,460	72,600	84,500	100,100	116,400	133,600
MANUFACTURING	27,634	33,982	64,040	89,316	118,700	140,900	168,800	198,600	230,600
FOOD & KINDRED PRODUCTS	7,897	10,592	17,824	20,248	22,300	23,600	24,900	26,100	27,300
TEXTILE MILL PRODUCTS	42	125	281	187	200	200	200	300	300
APPAREL & OTHER FABRIC PRODUCTS	285	531	1,708	3,114	3,600	3,900	4,200	4,400	4,700
PRINTING & PUBLISHING	1,795	2,863	5,766	6,948	9,600	11,400	13,900	16,500	19,400
CHEMICALS & ALLIED PRODUCTS	1,129	2,238	5,107	8,196	11,700	14,200	17,400	20,700	24,100
LUMBER PRODUCTS & FURNITURE	5,756	5,561	3,635	3,419	3,600	3,700	3,900	4,000	4,200
MACHINERY, ALL	492	1,073	6,822	18,807	28,100	35,700	45,600	56,400	67,900
MACHINERY, EXCL. ELECTRICAL		825	2,505	5,830	7,900	9,400	11,500	13,600	15,900
ELEC. MACHINERY & SUPPLIES		248	4,317	12,977	20,200	26,300	34,100	42,700	52,000
TRANSPORTATION EQUIPMENT	1,640	725	2,966	4,322	6,800	8,800	11,300	14,100	17,300
MOTOR VEHICLES & EQUIPMENT	59	162	572	1,201	1,500	1,800	2,100	2,500	2,900
TRANS. EQUIP., EX. MTR. VEHs.	1,581	563	2,394	3,121	5,300	6,900	9,100	11,600	14,400
OTHER MANUFACTURING	8,598	10,274	19,931	24,075	32,500	38,900	47,100	55,700	65,200
PAPER & ALLIED PRODUCTS		343	883	1,166	1,800	2,400	3,200	4,100	5,200
PETROLEUM REFINING		87	402	957	1,000	1,100	1,200	1,300	1,300
PRIMARY METALS		187	1,027	1,975	2,000	2,100	2,200	2,200	2,300
FABRICATED METALS & ORDNANCE		1,540	5,193	7,249	10,000	11,900	14,400	16,900	19,600
MISCELLANEOUS MANUFACTURING		8,117	12,426	12,728	17,500	21,200	25,900	31,000	36,500
TRANS., COMM., & PUBLIC UTILITIES	10,854	17,574	28,551	36,064	47,500	56,300	67,900	80,300	93,700
TRANSPORTATION	7,636	11,333	15,172	16,125	20,400	24,200	29,100	34,300	40,000
RAILROAD TRANSPORTATION	3,670	4,798	4,288	3,722	3,200	3,200	3,100	3,000	2,800
TRUCKING & WAREHOUSING	1,445	2,413	5,239	7,139	10,000	12,000	14,700	17,600	20,900
OTHER TRANSPORTATION SERVICES	2,521	4,122	5,645	5,264	7,200	8,900	11,200	13,600	16,200
COMMUNICATIONS	1,171	2,413	5,573	6,487	9,400	11,600	14,500	17,700	21,100
UTILITIES (ELEC., GAS, SANITARY)	2,047	3,828	7,806	13,452	17,600	20,400	24,200	28,200	32,500
WHOLESALE & RETAIL TRADE	38,985	63,680	106,482	118,435	157,700	184,400	219,900	257,000	296,900
FINANCE, INSURANCE & REAL ESTATE	4,917	8,832	23,988	32,914	48,300	59,200	73,500	89,100	106,200
SERVICES	45,107	58,060	109,518	142,992	227,000	285,400	361,500	445,700	537,800
BUSINESS SERVICES	33,619	37,971	59,551	70,925	90,100	102,100	118,200	135,000	153,000
LODGING PLACES & PERS. SERV.	10,741	13,672	21,592	26,656	32,300	36,100	41,400	46,900	53,000
BUSINESS & REPAIR SERVICES	3,369	6,668	13,127	19,174	32,100	39,800	49,600	60,000	70,900
AMUSEMENT & REC. SERVICES	2,653	3,364	5,050	6,609	9,200	11,100	13,700	16,400	19,500
PRIVATE HOUSEHOLDS	16,856	14,267	19,782	18,486	16,300	14,900	13,400	11,500	9,500
PROFESSIONAL SERVICES	11,488	20,089	49,967	72,067	136,900	183,200	243,300	310,600	384,800
GOVERNMENT	5,105	14,284	23,511	30,417	45,400	55,600	69,500	85,600	104,300
CIVILIAN GOVERNMENT	5,105	8,948	16,597	23,228	38,500	48,700	62,600	78,600	97,300
ARMED FORCES		5,336	6,914	7,189	6,900	6,900	6,900	6,900	6,900

TABLE 1. POPULATION, EMPLOYMENT, PERSONAL INCOME, AND EARNINGS BY INDUSTRY, HISTORICAL AND PROJECTED, SELECTED YEARS, 1950 - 2020

	1950	1959	1962	1968	1969	1980	1990	2000	2010	2020
POPULATION, MIDYEAR	279,490	301,830	318,840	334,323	346,009	415,300	481,200	570,800	670,600	780,200
PER CAPITA INCOME (1967\$)	1,157	1,493	1,577	2,335	2,414	3,562	4,988	6,881	9,337	12,625
PER CAPITA INCOME RELATIVE (US\$1.00)	.56	.61	.61	.71	.71	.75	.81	.83	.88	.89
TOTAL EMPLOYMENT	87,909	106,557	108,673			157,500	182,300	215,900	253,700	296,000
EMPLOYMENT/POPULATION RATIO	.34	.35	.34			.38	.38	.38	.38	.38
EARNINGS PER WORKER (1967\$)	2,673	3,411	3,660			7,152	9,980	13,741	18,578	24,988
EARNINGS PER WORKER RELATIVE (US\$1.00)	.59	.64	.64			.76	.82	.87	.91	.94
IN THOUSANDS OF 1967 \$										
TOTAL PERSONAL INCOME	300,303	450,532	502,656	780,631	835,334	1,479,500	2,400,400	3,927,600	6,261,900	9,850,900
TOTAL EARNINGS	234,968	363,472	397,752	596,140	638,543	1,126,700	1,819,600	2,966,600	4,714,600	7,397,200
AGRICULTURE, FORESTRY & FISHERIES	36,730	13,760	15,749	33,327	34,819	39,800	48,000	57,100	74,300	99,000
AGRICULTURE	30,670	9,400	10,924	30,304	32,028	35,500	42,500	50,000	65,100	87,300
FORESTRY & FISHERIES	6,059	4,360	4,825	3,023	2,790	4,200	5,400	7,100	9,200	11,700
MINING	428	743	706	407	655	800	1,000	1,300	1,700	2,200
CRUDE PETROLEUM & NATURAL GAS	(D)	(D)	(D)	59	57	(S)	(S)	(S)	(S)	(S)
NONMETALLIC, EXCEPT FUELS	(D)	(D)	(D)	348	597	700	900	1,200	1,600	2,100
CONTRACT CONSTRUCTION	19,333	25,466	19,412	33,362	34,701	60,000	97,800	160,900	257,600	405,400
MANUFACTURING	32,913	48,589	55,947	76,727	81,518	129,100	190,500	286,900	427,400	635,300
FOOD & KINDRED PRODUCTS	2,540	4,752	5,285	6,711	6,998	10,900	15,600	22,600	32,000	45,200
TEXTILE MILL PRODUCTS	(D)	(D)	(D)	27	26	(S)	(S)	(S)	(S)	(S)
APPAREL & OTHER FABRIC PRODUCTS	0	349	1,254	3,391	3,819	6,400	9,600	14,700	21,700	32,300
LUMBER PRODUCTS & FURNITURE	17,431	15,110	14,681	18,058	18,612	26,800	36,300	50,400	69,200	96,200
PAPER & ALLIED PRODUCTS	8,277	18,594	22,813	27,835	29,388	44,500	63,400	93,400	134,700	195,200
PRINTING & PUBLISHING	1,325	3,275	3,533	4,101	4,142	7,400	12,200	20,300	33,100	53,300
CHEMICALS & ALLIED PRODUCTS	817	1,480	2,992	3,542	3,885	7,100	11,900	19,700	32,300	51,500
PETROLEUM REFINING	(D)	(D)	(D)	718	703	1,100	1,700	2,600	3,900	5,800
PRIMARY METALS	(D)	(D)	(D)	(D)	(D)	800	1,100	1,500	2,100	2,700
FABRICATED METALS & ORDNANCE	4	720	990	2,150	2,667	46,100	8,700	14,700	23,400	38,000
MACHINERY, EXCLUDING ELECTRICAL		119	157	729	(D)	1,400	2,400	4,100	7,800	12,500
ELECTRICAL MACHINERY & SUPPLIES		(D)	(D)	(D)	0	(S)	(S)	(S)	(S)	(S)
TOTAL MACHINERY (1950 ONLY)	0									
MOTOR VEHICLES & EQUIPMENT	0	0	0	11	9	(S)	(S)	(S)	(S)	(S)
TRANS. EQUIP., EXCL. MTR. VEHs.	3	410	430	3,096	3,725	6,600	10,300	16,500	25,900	40,200
OTHER MANUFACTURING	2,433	3,336	3,352	5,734	6,135	10,500	16,500	25,800	40,500	61,700
TRANS., COMM. & PUBLIC UTILITIES	8,169	9,258	13,228	19,889	22,582	39,300	64,500	106,900	172,100	274,300
RAILROAD TRANSPORTATION	4,505	676	665	511	552	800	1,100	1,600	2,200	2,900
TRUCKING & WAREHOUSING	761	2,954	2,661	4,346	5,042	9,100	15,200	25,600	42,000	67,900
OTHER TRANSPORTATION & SERVICES	810	1,809	2,696	4,283	5,026	9,000	14,800	24,600	39,800	63,900
COMMUNICATIONS	1,480	2,745	3,944	5,970	6,770	11,600	19,500	32,900	53,800	86,400
UTILITIES (ELEC., GAS, SANITARY)	613	1,076	3,266	4,778	5,189	8,700	13,700	21,900	34,200	53,000
WHOLESALE & RETAIL TRADE	39,620	70,856	70,208	93,017	101,609	185,000	301,200	495,700	793,600	1,253,900
FINANCE, INSURANCE & REAL ESTATE	6,034	13,742	15,463	22,755	23,683	42,900	70,600	116,800	188,100	298,900
SERVICES	23,699	41,310	43,633	60,867	65,622	125,800	216,100	373,400	627,500	1,032,900
LODGING PLACES & PERSONAL SERV.	(D)	(D)	(D)	(D)	(D)	21,100	33,100	52,600	81,700	125,500
BUSINESS & REPAIR SERVICES	974	3,021	3,479	7,115	8,131	16,700	30,600	55,800	97,200	164,100
AMUSEMENT & RECREATION SERVICES	(D)	(D)	(D)	(D)	(D)	5,300	13,800	21,800	33,800	51,800
PRIVATE HOUSEHOLDS	10,179	13,594	13,889	13,180	13,062	17,500	22,000	27,800	34,000	41,900
PROFESSIONAL SERVICES	(D)	(D)	(D)	26,557	29,538	65,000	121,600	223,300	392,600	667,400
GOVERNMENT	68,040	139,745	163,403	255,780	273,363	503,500	829,600	1,367,100	2,171,800	3,394,700
CIVILIAN GOVERNMENT	52,512	100,259	128,559	222,294	242,141	465,100	779,700	1,302,300	2,087,900	3,285,700
FEDERAL GOVERNMENT	7,910	18,226	22,827	35,615	35,656	61,900	90,300	131,100	183,200	246,500
STATE & LOCAL GOVERNMENT	44,602	82,032	105,735	186,676	206,486	403,200	689,300	1,171,200	1,904,700	3,039,200
ARMED FORCES	15,528	39,488	34,844	33,489	31,221	38,400	49,800	64,800	83,800	108,900

TABLE 2. POPULATION, AND EMPLOYMENT BY INDUSTRY, HISTORICAL AND PROJECTED,
SELECTED YEARS, 1940-2020

	1940	1950	1960	1966	1980	1990	2000	2010	2020
POPULATION	216,121	255,919	310,841	332,042	415,300	481,200	570,800	670,600	780,200
EMPLOYMENT/POPULATION RATIO	.30	.34	.34	.36	.38	.38	.38	.38	.38
TOTAL EMPLOYMENT	65,159	87,909	106,557	120,992	157,500	182,300	215,900	233,700	296,000
AGRICULTURE, FORESTRY & FISHERIES	25,655	23,901	14,164	12,882	9,300	8,000	7,200	7,000	6,900
AGRICULTURE	23,261	21,799	12,967	11,367	7,900	6,600	5,900	5,800	5,700
FORESTRY & FISHERIES	2,394	2,102	1,197	1,515	1,400	1,300	1,200	1,200	1,100
MINING	131	255	228	366	200	200	200	100	100
CONTRACT CONSTRUCTION	2,879	6,363	8,166	8,494	12,400	14,600	17,400	20,500	23,800
MANUFACTURING	10,466	11,619	14,305	15,265	17,800	19,900	22,500	23,300	28,400
FOOD & KINDRED PRODUCTS	621	891	1,955	2,364	2,400	2,500	2,600	2,700	2,800
TEXTILE MILL PRODUCTS	74	89	105	(5)	(5)	(5)	(5)	(5)	(5)
APPAREL & OTHER FABRIC PRODUCTS	24	260	463	689	900	1,000	1,100	1,300	1,400
PRINTING & PUBLISHING	247	470	803	947	1,100	1,400	1,800	2,200	2,700
CHEMICALS & ALLIED PRODUCTS	268	276	454	794	1,200	1,500	1,900	2,400	2,900
LUMBER PRODUCTS & FURNITURE	6,849	6,451	4,772	4,673	4,400	4,300	4,300	4,200	4,200
MACHINERY, ALL	51	77	264	340	400	500	600	700	800
MACHINERY, EXCL. ELECTRICAL		55	164	238	300	400	500	600	700
ELEC. MACHINERY & SUPPLIES		22	100	102	100	100	100	100	100
TRANSPORTATION EQUIPMENT	56	66	367	504	700	900	1,100	1,300	1,500
MOTOR VEHICLES & EQUIPMENT	5	3	29	21	(5)	(5)	(5)	(5)	(5)
TRANS. EQUIP., EX. MTR. VEHs.	51	63	338	483	700	800	1,000	1,300	1,500
OTHER MANUFACTURING	2,276	3,039	5,122	4,954	6,300	7,400	8,700	10,100	11,600
PAPER & ALLIED PRODUCTS		2,175	3,411	3,252	3,900	4,400	5,100	5,700	6,400
PETROLEUM REFINING		5	68	116	100	100	100	200	200
PRIMARY METALS		10	30	28	(5)	(5)	(5)	(5)	(5)
FABRICATED METALS & ORDNANCE		47	376	622	900	1,100	1,500	1,900	2,200
MISCELLANEOUS MANUFACTURING		802	1,237	936	1,200	1,500	1,800	2,200	2,600
TRANS., COMM., & PUBLIC UTILITIES	2,199	3,782	4,770	5,132	9,700	10,800	12,500	14,400	16,500
TRANSPORTATION	1,699	2,326	2,466	3,401	6,600	5,100	5,900	6,700	7,800
RAILROAD TRANSPORTATION	866	888	712	570	300	200	200	200	200
TRUCKING & WAREHOUSING	293	371	618	756	1,200	1,500	2,000	2,500	3,000
OTHER TRANSPORTATION SERVICES	540	1,067	1,136	2,075	3,000	3,200	3,600	4,000	4,500
COMMUNICATIONS	252	739	1,008	1,218	1,800	2,200	2,700	3,300	3,900
UTILITIES (ELEC., GAS, SANITARY)	248	717	1,296	2,973	3,200	3,400	3,800	4,200	4,700
WHOLESALE & RETAIL TRADE	7,362	13,473	18,423	20,104	28,800	34,700	42,100	50,100	58,800
FINANCE, INSURANCE & REAL ESTATE	632	1,409	2,950	3,675	5,500	6,900	8,600	10,600	12,700
SERVICES	13,367	18,644	28,844	36,272	49,500	58,700	70,700	84,600	100,100
BUSINESS SERVICES	8,943	10,047	13,046	13,031	16,000	17,200	18,800	20,600	22,500
LODGING PLACES & PERS. SERV.	1,992	3,001	3,883	7,115	5,100	5,600	6,300	6,900	7,600
BUSINESS & REPAIR SERVICES	570	1,290	1,722	1,824	3,600	4,700	6,200	7,800	9,600
AMUSEMENT & REC. SERVICES	395	534	692	781	1,100	1,300	1,500	1,800	2,000
PRIVATE HOUSEHOLDS	6,026	5,222	6,749	6,311	6,000	5,400	4,700	3,900	3,100
PROFESSIONAL SERVICES	4,424	8,597	15,798	23,241	33,500	41,500	51,900	64,000	77,500
GOVERNMENT	2,468	8,463	14,707	16,342	23,900	28,200	34,100	40,700	48,400
CIVILIAN GOVERNMENT	2,468	5,075	8,206	11,449	19,200	23,500	29,400	36,000	43,600
ARMED FORCES		3,388	6,501	4,893	4,700	4,700	4,700	4,700	4,700

TABLE 1. POPULATION, EMPLOYMENT, PERSONAL INCOME, AND EARNINGS BY INDUSTRY, HISTORICAL AND PROJECTED, SELECTED YEARS, 1950 - 2020

	1950	1959	1962	1968	1969	1980	1990	2000	2010	2020
POPULATION, MIDEAR	207,346	304,871	333,702	365,410	380,334	415,400	457,800	499,100	545,100	592,700
PER CAPITA INCOME (1967\$)	1,498	1,994	1,971	2,759	2,840	4,013	5,373	7,354	9,834	13,065
PER CAPITA INCOME RELATIVE (US=1.00)	.73	.82	.76	.84	.83	.84	.87	.89	.90	.92
TOTAL EMPLOYMENT	70,961	110,656	122,536			164,200	179,100	198,600	218,200	237,800
EMPLOYMENT/POPULATION RATIO	.34	.36	.37			.40	.39	.40	.40	.40
EARNINGS PER WORKER (1967\$)	3,384	4,633	4,513			7,917	10,620	14,193	18,744	24,723
EARNINGS PER WORKER RELATIVE (US=1.00)	.75	.86	.78			.84	.87	.90	.92	.93
IN THOUSANDS OF 1967 \$										
TOTAL PERSONAL INCOME	310,535	607,991	657,877	1,007,995	1,079,975	1,667,300	2,460,000	3,670,600	5,360,200	7,744,500
TOTAL EARNINGS	240,141	512,663	553,020	794,249	848,565	1,300,500	1,902,800	2,819,200	4,091,300	5,880,700
AGRICULTURE, FORESTRY & FISHERIES	11,960	4,721	4,066	13,001	12,856	10,400	11,600	14,300	18,900	25,200
AGRICULTURE	9,891	2,939	2,033	11,269	11,334	7,900	8,200	9,600	12,500	16,800
FORESTRY & FISHERIES	2,068	1,782	2,034	1,731	1,523	2,500	3,400	4,600	6,300	8,400
MINING	(D)	(D)	(D)	1,457	2,171	2,900	3,800	5,000	6,400	8,100
CRUDE PETROLEUM & NATURAL GAS	(D)	(D)	(D)	972		2,100	2,800	3,600	4,400	5,400
NONMETALLIC, EXCEPT FUELS	(D)	(D)	(D)	485	(D)	700	1,000	1,400	1,900	2,700
CONTRACT CONSTRUCTION	11,779	38,273	29,105	41,726	46,737	70,200	103,700	154,800	226,100	325,600
MANUFACTURING	29,195	116,041	116,127	135,603	149,527	225,400	318,600	464,100	669,400	965,100
FOOD & KINDRED PRODUCTS	3,934	6,478	6,128	6,667	9,200	9,200	12,100	16,100	21,200	27,900
TEXTILE MILL PRODUCTS	1,714	1,222	787	1,383	1,480	2,200	3,000	4,100	5,700	7,800
APPAREL & OTHER FABRIC PRODUCTS	(D)	(D)	(D)	(D)	(D)	10,200	14,600	21,100	30,000	42,900
LUMBER PRODUCTS & FURNITURE	9,606	14,740	8,915	11,171	11,517	15,300	19,500	25,700	33,600	44,500
PAPER & ALLIED PRODUCTS	(D)	(D)	(D)	22,578	24,138	33,600	45,300	62,700	86,400	119,500
PRINTING & PUBLISHING	1,434	5,246	2,743	3,410	3,656	5,700	8,600	13,400	20,300	30,300
CHEMICALS & ALLIED PRODUCTS	3,226	42,747	59,145	66,256	70,602	105,700	147,900	213,000	302,100	428,200
PETROLEUM REFINING	(D)	(D)	(D)	171	101	(S)	(S)	(S)	(S)	(S)
PRIMARY METALS	(D)	(D)	(D)	(D)	(D)	(S)	(S)	(S)	(S)	(S)
FABRICATED METALS & ORDNANCE	248	517	4,299	949	993	1,600	2,700	4,200	7,000	10,300
MACHINERY, EXCLUDING ELECTRICAL	(D)	(D)	(D)	711	(D)	1,400	2,400	4,100	7,800	12,500
ELECTRICAL MACHINERY & SUPPLIES	(D)	(D)	(D)	(D)	(D)	5,400	9,300	16,600	27,400	46,200
TOTAL MACHINERY (1950 ONLY)	0	0	0	7	7	(S)	(S)	(S)	(S)	(S)
MOTOR VEHICLES & EQUIPMENT	0	0	0	7	7	(S)	(S)	(S)	(S)	(S)
TRANS. EQUIP., EXCL. MTR. VEHs.	69	317	3,849	4,097	7,946	12,700	18,300	27,400	39,900	58,000
OTHER MANUFACTURING	(D)	(D)	(D)	8,421	11,659	20,500	33,100	53,600	85,700	134,100
TRANS., COMM. & PUBLIC UTILITIES	11,817	13,333	20,055	29,201	30,782	46,200	68,100	101,500	148,700	216,400
RAILROAD TRANSPORTATION	5,260	1,277	1,212	1,161	1,242	1,600	2,000	2,500	2,900	3,500
TRUCKING & WAREHOUSING	883	2,832	3,677	7,107	7,269	11,400	17,100	26,100	38,800	57,400
OTHER TRANSPORTATION & SERVICES	(D)	(D)	(D)	4,179	4,223	6,700	10,300	15,800	24,100	36,200
COMMUNICATIONS	(D)	(D)	(D)	8,286	9,134	13,700	20,700	31,700	47,200	69,500
UTILITIES (ELEC., GAS, SANITARY)	613	1,251	6,350	8,469	8,916	12,700	17,700	25,300	35,500	49,600
WHOLESALE & RETAIL TRADE	34,767	65,903	69,002	95,038	103,161	167,800	252,900	385,700	574,100	846,000
FINANCE, INSURANCE & REAL ESTATE	(D)	(D)	(D)	26,639	27,794	44,200	66,400	100,600	149,500	219,700
SERVICES	24,961	57,003	60,112	89,844	93,809	159,800	252,300	399,500	613,000	921,400
LODGING PLACES & PERSONAL SERV.	3,859	7,004	7,590	12,649	13,399	21,100	30,500	44,600	64,000	91,000
BUSINESS & REPAIR SERVICES	1,474	4,404	5,626	11,686	12,853	22,800	37,400	61,500	96,900	148,800
AMUSEMENT & RECREATION SERVICES	934	1,661	2,308	3,180	3,398	5,100	7,600	11,400	16,500	23,700
PRIVATE HOUSEHOLDS	8,865	14,479	15,048	13,918	13,821	16,300	18,700	21,600	24,400	27,700
PROFESSIONAL SERVICES	9,808	29,454	29,542	48,414	50,337	94,400	157,900	260,300	411,000	630,200
GOVERNMENT	107,332	199,417	234,962	361,736	381,728	573,100	825,100	1,193,200	1,685,000	2,352,400
CIVILIAN GOVERNMENT	45,878	83,286	105,461	179,517	190,943	338,800	521,100	798,200	1,173,900	1,688,400
FEDERAL GOVERNMENT	33,437	54,675	65,038	110,247	112,231	189,200	274,500	398,100	551,800	741,000
STATE & LOCAL GOVERNMENT	12,441	28,609	40,421	69,269	78,712	149,500	246,500	400,100	622,000	947,500
ARMED FORCES	61,456	116,132	129,504	182,220	190,785	234,300	303,900	394,900	511,100	663,900

TABLE 2. POPULATION, AND EMPLOYMENT BY INDUSTRY, HISTORICAL AND PROJECTED.
SELECTED YEARS, 1940-2020

	1940	1950	1960	1966	1980	1990	2000	2010	2020
POPULATION	148,569	204,961	313,638	359,780	415,400	457,800	499,100	545,100	592,700
EMPLOYMENT/POPULATION RATIO	.28	.35	.35	.38	.40	.39	.40	.40	.40
TOTAL EMPLOYMENT	42,063	70,961	110,656	138,062	164,200	179,100	198,600	218,200	237,800
AGRICULTURE, FORESTRY & FISHERIES	9,018	7,421	3,644	3,177	2,300	1,900	1,800	1,800	1,800
AGRICULTURE	7,766	6,639	3,041	2,390	1,400	1,000	900	900	900
FORESTRY & FISHERIES	1,252	782	603	787	800	900	900	900	900
MINING	47	62	147	102	100	100	100	200	200
CONTRACT CONSTRUCTION	2,635	3,684	8,372	8,999	11,200	12,400	14,000	15,400	16,700
MANUFACTURING	5,596	8,086	19,673	21,083	23,800	26,000	29,000	32,600	36,400
FOOD & KINDRED PRODUCTS	542	776	1,506	1,506	1,500	1,500	1,500	1,400	1,400
TEXTILE MILL PRODUCTS	89	215	6,115	7,754	7,300	7,100	6,900	6,600	6,400
APPAREL & OTHER FABRIC PRODUCTS	197	319	1,200	799	1,000	1,200	1,400	1,600	1,800
PRINTING & PUBLISHING	200	410	781	960	1,100	1,200	1,400	1,600	1,800
CHEMICALS & ALLIED PRODUCTS	862	598	1,652	1,842	2,600	3,200	4,000	4,800	5,600
LUMBER PRODUCTS & FURNITURE	3,051	3,123	2,582	2,567	2,200	2,100	2,000	1,900	1,800
MACHINERY, ALL	55	111	424	558	800	1,200	1,600	2,100	2,700
MACHINERY, EXCL. ELECTRICAL		92	176	217	200	300	400	500	600
ELEC. MACHINERY & SUPPLIES		19	248	341	500	800	1,100	1,500	2,000
TRANSPORTATION EQUIPMENT	108	121	823	736	1,100	1,300	1,700	2,000	2,400
MOTOR VEHICLES & EQUIPMENT	11	7	51	55	(5)	(5)	(5)	(5)	(5)
TRANS. EQUIP., EX. MTR. VEHs.	97	114	772	681	1,000	1,200	1,600	1,900	2,300
OTHER MANUFACTURING	492	2,413	4,590	4,361	5,700	6,800	8,300	10,100	12,200
PAPER & ALLIED PRODUCTS		2,033	3,146	2,727	3,000	3,200	3,500	3,900	4,200
PETROLEUM REFINING		18	37		(5)	(5)	(5)	(5)	(5)
PRIMARY METALS		25	44	43	(5)	(5)	(5)	(5)	(5)
FABRICATED METALS & ORDNANCE		65	914	976	1,400	1,700	2,100	2,600	3,100
MISCELLANEOUS MANUFACTURING		272	449	615	1,100	1,700	2,500	3,500	4,800
TRANS., COMM., & PUBLIC UTILITIES	2,243	3,692	5,283	7,361	8,400	9,000	9,000	10,700	11,600
TRANSPORTATION	1,804	2,484	2,753	3,234	3,600	3,800	4,200	4,600	5,100
RAILROAD TRANSPORTATION	988	1,056	758	643	400	300	200	200	200
TRUCKING & WAREHOUSING	267	409	973	1,620	1,900	2,100	2,400	2,600	2,900
OTHER TRANSPORTATION SERVICES	549	1,019	1,022	971	1,200	1,300	1,500	1,700	1,900
COMMUNICATIONS	168	473	1,168	1,382	1,800	2,100	2,400	2,700	2,900
UTILITIES (ELEC., GAS, SANITARY)	271	735	1,362	2,745	2,900	3,000	3,200	3,300	3,500
WHOLESALE & RETAIL TRADE	5,587	11,676	17,601	20,651	26,500	29,500	33,200	36,600	40,000
FINANCE, INSURANCE & REAL ESTATE	644	1,276	2,864	3,643	4,700	5,500	6,500	7,400	8,300
SERVICES	8,402	11,982	21,650	28,135	37,400	43,300	50,600	58,000	65,300
BUSINESS SERVICES	5,953	7,771	12,692	15,088	17,300	17,400	17,900	18,300	18,700
LODGING PLACES & PERS. SERV.	1,366	2,442	3,395	3,815	4,700	4,800	5,000	5,100	5,200
BUSINESS & REPAIR SERVICES	530	1,070	2,731	4,993	6,800	7,500	8,500	9,300	10,100
AMUSEMENT & REC. SERVICES	240	534	633	793	1,000	1,100	1,200	1,300	1,400
PRIVATE HOUSEHOLDS	3,817	3,725	5,933	5,487	4,600	3,900	3,100	2,400	1,800
PROFESSIONAL SERVICES	2,449	4,211	8,958	13,047	20,000	25,800	32,600	39,600	46,600
GOVERNMENT	7,891	23,082	31,422	44,911	49,600	51,000	53,200	55,200	57,100
CIVILIAN GOVERNMENT	2,890	8,628	11,800	16,284	21,900	23,400	25,500	27,600	29,500
ARMED FORCES	5,001	14,454	19,622	28,627	27,600	27,600	27,600	27,600	27,600

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TABLE 1. POPULATION, EMPLOYMENT, PERSONAL INCOME, AND EARNINGS BY INDUSTRY, HISTORICAL AND PROJECTED, SELECTED YEARS, 1950 - 2020

	1950	1959	1962	1968	1969	1980	1990	2000	2010	2020
POPULATION, MIDEAR	524,553	652,247	698,012	720,029	722,959	819,400	935,800	1,053,300	1,195,000	1,359,500
PER CAPITA INCOME (1967\$)	1,404	1,763	1,777	2,474	2,591	3,832	5,085	6,974	9,334	12,421
PER CAPITA INCOME RELATIVE (US=1.00)	.68	.72	.69	.75	.76	.80	.82	.84	.86	.87
TOTAL EMPLOYMENT	184,642	223,689	228,049			323,300	364,900	420,600	481,600	549,300
EMPLOYMENT/POPULATION RATIO	.35	.34	.33			.39	.39	.40	.40	.40
EARNINGS PER WORKER (1967\$)	3,322	4,333	4,513			7,647	10,164	13,496	17,769	23,439
EARNINGS PER WORKER RELATIVE (US=1.00)	.74	.81	.78			.81	.84	.85	.87	.88
IN THOUSANDS OF 1967 \$										
TOTAL PERSONAL INCOME	736,433	1,149,770	1,240,680	1,781,625	1,873,247	3,139,800	4,758,700	7,345,700	11,154,100	16,886,700
TOTAL EARNINGS	613,440	969,185	1,029,230	1,427,796	1,500,094	2,472,200	3,709,100	5,677,200	8,557,400	12,276,100
AGRICULTURE, FORESTRY & FISHERIES	50,740	35,462	30,704	35,293	37,669	40,500	48,700	60,500	80,400	108,200
AGRICULTURE	45,318	30,242	24,658	28,737	31,805	30,500	34,700	40,800	53,100	71,300
FORESTRY & FISHERIES	5,422	5,218	6,046	6,556	5,864	9,900	13,900	19,600	27,200	36,800
MINING	599	2,290	3,404	3,003	4,209	5,700	7,300	9,400	11,700	14,600
CRUDE PETROLEUM & NATURAL GAS	80	1,235	2,736	2,220	3,513	4,700	6,000	7,600	9,400	11,900
NONMETALLIC, EXCEPT FUELS	519	1,055	668	784	694	900	1,200	1,700	2,300	3,100
CONTRACT CONSTRUCTION	36,141	64,074	51,636	96,418	99,723	157,900	235,000	356,700	533,400	793,600
MANUFACTURING	119,464	221,398	226,497	385,659	408,727	668,800	1,004,700	1,544,200	2,335,600	3,529,900
FOOD & KINDRED PRODUCTS	12,327	21,698	21,945	26,008	25,061	35,500	46,100	60,800	79,400	105,300
TEXTILE MILL PRODUCTS	2,692	2,864	4,201	(D)	4,136	6,200	8,500	11,800	16,200	22,400
APPAREL & OTHER FABRIC PRODUCTS	3,781	10,394	14,500	25,970	24,612	41,700	62,700	95,300	141,600	210,000
LUMBER PRODUCTS & FURNITURE	35,993	26,358	24,387	39,390	43,142	59,800	78,500	105,900	141,900	192,400
PAPER & ALLIED PRODUCTS	29,435	59,416	63,089	87,177	92,671	149,000	222,400	340,200	511,200	766,100
PRINTING & PUBLISHING	3,332	4,828	5,273	7,250	7,808	13,200	20,400	32,000	50,100	78,000
CHEMICALS & ALLIED PRODUCTS	6,698	18,332	22,392	41,719	45,439	84,700	141,000	237,400	387,700	624,300
PETROLEUM REFINING	1,000	10,332	22,392	41,719	45,439	84,700	141,000	237,400	387,700	624,300
PRIMARY METALS	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
FABRICATED METALS & ORDNANCE	1,152	2,884	3,621	6,170	7,043	14,100	24,700	43,200	73,600	122,300
MACHINERY, EXCLUDING ELECTRICAL		1,201	2,645	10,710	(D)	21,000	33,500	53,700	84,200	130,900
ELECTRICAL MACHINERY & SUPPLIES		(D)	(D)	320	968	1,000	1,600	1,900	2,000	3,000
TOTAL MACHINERY (1950 ONLY)	568	2,190	1,248	2,481	3,091	5,600	9,300	15,900	26,300	42,900
MOTOR VEHICLES & EQUIPMENT	484	62,621	52,659	(D)	116,755	196,600	297,000	458,400	693,300	1,044,000
TRANS. EQUIP., EXCL. MTR. VEH.	15,042	62,621	52,659	9,704	11,270	19,100	29,700	46,700	71,800	110,000
OTHER-MANUFACTURING	6,960	4,904	6,481							
TRANS., COMM. & PUBLIC UTILITIES	59,174	76,668	77,189	98,900	103,493	153,100	212,600	304,900	434,400	624,500
RAILROAD TRANSPORTATION	17,784	18,078	16,619	15,365	15,164	19,200	22,100	25,600	28,600	32,100
TRUCKING & WAREHOUSING	2,777	7,273	7,767	15,298	15,025	25,100	38,400	59,700	91,500	140,400
OTHER TRANSPORTATION & SERVICES	29,538	28,080	29,465	37,699	38,371	54,000	70,700	95,900	129,100	174,500
COMMUNICATIONS	4,496	10,613	11,699	16,091	18,759	29,900	45,900	71,700	109,700	167,300
UTILITIES (ELEC., GAS, SANITARY)	4,579	12,620	11,642	14,450	16,172	24,700	35,300	51,800	75,200	110,000
WHOLESALE & RETAIL TRADE	107,438	147,696	154,669	201,123	208,000	359,200	549,400	857,600	1,314,100	2,006,500
FINANCE, INSURANCE & REAL ESTATE	16,054	36,024	35,765	48,797	50,947	86,700	133,100	208,500	320,600	491,200
SERVICES	65,619	111,472	119,825	171,400	172,314	315,300	508,000	826,700	1,312,200	2,058,200
LODGING PLACES & PERSONAL SERV.	11,826	17,573	19,049	27,145	26,829	44,900	65,700	98,200	144,800	213,600
BUSINESS & REPAIR SERVICES	3,727	14,123	11,986	25,232	22,381	42,700	72,100	121,500	199,200	320,300
AMUSEMENT & RECREATION SERVICES	3,437	3,282	3,381	4,680	4,774	7,900	12,100	18,900	28,900	43,900
PRIVATE HOUSEHOLDS	22,217	27,553	28,300	24,773	24,950	31,600	37,100	44,300	51,800	61,600
PROFESSIONAL SERVICES	24,416	48,941	57,109	89,571	93,383	188,000	320,800	543,600	887,300	1,418,600
GOVERNMENT	158,206	274,096	329,541	387,201	415,013	684,600	1,010,000	1,508,300	2,214,700	3,249,000
CIVILIAN GOVERNMENT	76,831	188,299	223,314	247,208	256,891	490,300	757,900	1,180,700	1,790,800	2,698,300
FEDERAL GOVERNMENT	55,115	135,356	159,821	122,635	108,203	188,800	251,500	337,000	435,900	548,800
STATE & LOCAL GOVERNMENT	21,711	52,942	63,493	124,575	148,686	301,400	506,300	843,700	1,354,800	2,149,500
ARMED FORCES	81,574	85,798	106,228	139,995	158,123	194,300	292,100	327,600	423,900	550,700

POPULATION, APRIL 1, 1970 724,148

TABLE 2. POPULATION, AND EMPLOYMENT BY INDUSTRY, HISTORICAL AND PROJECTED.
SELECTED YEARS, 1940-2020

	1940	1950	1960	1966	1980	1990	2000	2010	2020
POPULATION	395,126	525,211	664,860	719,110	819,400	935,800	1,053,300	1,195,000	1,359,300
EMPLOYMENT/POPULATION RATIO	.32	.35	.34	.36	.39	.39	.40	.40	.40
TOTAL EMPLOYMENT	128,235	184,642	223,689	261,033	323,300	364,900	420,600	481,600	549,300
AGRICULTURE, FORESTRY & FISHERIES	39,039	29,738	12,758	11,651	9,100	8,300	7,900	8,000	8,000
AGRICULTURE	35,952	26,852	10,563	8,664	5,700	4,600	4,100	4,000	4,000
FORESTRY & FISHERIES	3,087	2,886	2,195	2,987	3,400	3,600	3,800	3,900	4,000
MINING	126	286	624	269	300	300	300	300	400
CONTRACT CONSTRUCTION	6,599	10,751	15,026	13,682	16,600	19,500	23,200	27,100	31,400
MANUFACTURING	25,588	33,595	44,935	60,253	77,000	89,500	105,600	123,200	142,700
FOOD & KINDRED PRODUCTS	4,692	3,888	5,094	4,862	4,900	4,900	4,900	4,900	5,000
TEXTILE MILL PRODUCTS	1,449	1,646	728	1,124	1,100	1,100	1,100	1,000	1,000
APPAREL & OTHER FABRIC PRODUCTS	1,092	1,413	3,898	9,080	9,700	10,100	10,400	10,700	10,900
PRINTING & PUBLISHING	621	1,113	1,445	1,574	2,100	2,500	2,900	3,500	4,100
CHEMICALS & ALLIED PRODUCTS	1,130	1,472	3,304	4,812	8,000	10,600	14,100	18,100	22,600
LUMBER PRODUCTS & FURNITURE	8,530	12,269	9,092	9,595	9,200	9,100	9,000	8,900	8,900
MACHINERY, ALL	285	378	789	731	1,300	2,000	2,900	4,200	5,800
MACHINERY, EXCL. ELECTRICAL		320	553	347	700	1,100	1,800	2,800	4,100
ELEC. MACHINERY & SUPPLIES		58	236	384	600	800	1,000	1,300	1,700
TRANSPORTATION EQUIPMENT	2,730	3,610	8,748	12,617	19,600	24,500	30,700	37,400	44,800
MOTOR VEHICLES & EQUIPMENT	21	101	305	847	1,100	1,300	1,600	1,900	2,200
TRANS. EQUIP., EX. MTR. VCHS.	2,709	3,509	8,443	11,770	18,500	23,100	29,100	35,500	42,500
OTHER MANUFACTURING	5,059	7,806	11,837	15,858	20,700	24,400	29,100	34,000	39,300
PAPER & ALLIED PRODUCTS		5,363	8,269	9,755	12,900	15,300	18,400	21,600	25,200
PETROLEUM REFINING		264	487	1,557	1,800	2,000	2,200	2,300	2,500
PRIMARY METALS		276	497	838	900	1,000	1,000	1,000	1,100
FABRICATED METALS & ORDNANCE		341	560	1,194	1,800	2,300	3,000	3,800	4,700
MISCELLANEOUS MANUFACTURING		1,562	2,024	2,514	3,200	3,700	4,300	5,000	5,700
TRANS., COMM., & PUBLIC UTILITIES	9,430	13,999	14,443	14,504	17,800	19,600	22,000	24,400	27,100
TRANSPORTATION	7,797	11,019	10,161	9,900	11,400	12,100	13,200	14,300	15,400
RAILROAD TRANSPORTATION	2,807	3,590	2,510	2,069	1,600	1,500	1,300	1,200	1,100
TRUCKING & WAREHOUSING	1,577	1,280	1,899	2,506	3,600	4,200	4,900	5,700	6,600
OTHER TRANSPORTATION SERVICES	3,413	6,149	5,752	5,325	6,100	6,400	6,800	7,300	7,600
COMMUNICATIONS	655	1,247	1,786	1,953	2,800	3,400	4,100	4,900	5,700
UTILITIES (ELEC., GAS, SANITARY)	978	1,733	2,496	2,651	4,500	4,000	4,600	5,200	5,900
WHOLESALE & RETAIL TRADE	15,875	30,094	38,963	44,721	56,400	63,800	73,500	83,600	94,600
FINANCE, INSURANCE & REAL ESTATE	2,051	3,791	6,573	6,732	9,400	11,200	13,500	16,100	18,800
SERVICES	26,309	34,914	47,948	56,162	76,600	90,700	108,900	129,000	151,400
BUSINESS SERVICES	18,877	22,222	26,945	27,927	29,800	30,400	31,800	33,600	36,000
LODGING PLACES & PERS. SERV.	4,266	6,468	8,214	9,132	9,900	10,200	10,900	11,500	12,300
BUSINESS & REPAIR SERVICES	1,592	3,202	3,658	5,016	6,900	8,700	10,900	13,300	15,900
AMUSEMENT & REC. SERVICES	678	1,325	1,304	1,640	2,300	2,400	2,600	2,800	3,100
PRIVATE HOUSEHOLDS	12,341	11,227	13,569	12,139	10,700	9,000	7,300	5,900	4,600
PROFESSIONAL SERVICES	7,432	12,692	21,003	28,235	46,700	60,300	77,000	95,300	115,400
GOVERNMENT	3,218	27,474	42,419	53,059	59,700	61,600	65,300	69,500	74,400
CIVILIAN GOVERNMENT	2,704	12,346	24,488	27,071	34,600	36,500	40,300	44,400	49,400
ARMED FORCES	514	15,128	17,931	25,988	25,000	25,000	25,000	25,000	25,000

Reproduced from: U.S. Water Resources Council, 1972 DBERS projections; p. 279.

ATTACHMENT I

(DEPARTMENT OF DEFENSE)

FACT SHEET SUMMARIZING POTENTIAL IMPACT
OF POSSIBLE LEASING

THE UNIVERSITY OF CHICAGO LIBRARY
1215 EAST 58TH STREET
CHICAGO, ILLINOIS 60637
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FAX: 773-936-5001
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Enclosed is a copy of a fact sheet developed by the Department of Defense dated September 12, 1973. This fact sheet outlines the negotiations between the Departments of Defense and Interior and summarizes the potential impact on DOD activities of possible oil and gas leasing operations on the OCS in the northeastern Gulf of Mexico.

FACT SHEET

SUBJECT: Oil Leases Near Military Installations on the Gulf Coast
Outer Continental Shelf - 12 September 1973

In Dec 1972, the Department of Interior published in the Federal Register a call for nominations from industry of areas for possible oil and gas leasing on the outer Continental shelf offshore Mississippi, Alabama and Florida. This action was based on plans formulated by Interior and released to the public in the form of a tentative 5 year schedule in June 1971 (enclosure 1). This schedule was updated and extended and released again in July 1973. The Miss., Ala., Fla. area again appears on the new schedule (enclosure 2). The areas in which nomination might be made totaled 41,000 sq. miles and were as indicated on the attached sketch map. Nominations were desired by 19 March 1973. Following study by Department of Interior, that Department would select areas proposed to be offered for lease in Dec 73. Interior planned that the lease offering would total approximately 800,000 to one million selected acres in the total of the 26 million acres within which nominations might be made. Coordination by Interior with other interested agencies would be effected before exact areas were offered.

The Department of Defense analyzed the area covered by the call. Defense does conduct in four major defense warning areas shown on the sketch (W-155, W-151, W-470, and W-168) test and training activities essential to our national defense. These include missions such as gunnery, missile firing, bomb drops, electromagnetic warfare exercises, and aircraft carrier landing and take-off training. The warning areas are adjacent to the major training and test facilities at Pensacola Naval Air Station, Eglin AFB, Tyndall AFB, and MacDill AFB, and the Naval Coastal Systems Laboratory at Panama City. Therefore, firm agreements were reached between Interior and Defense that prior to final selection of the areas to be leased there would be coordination between these two agencies with the objective of avoiding any undue impact on essential Defense activities.

By 15 May 73, Interior had studied the nominations and other available information and informed DoD that the preferred areas for lease were approximately those shown on the sketch and numbered 1 through 14. After careful study, the DoD concluded that it could adjust its essential activities within the areas concerned for the 622,000 acres numbered 2 through 12 and 14 on the sketch. Full opening of the No. 1 area of 460,800 acres and opening of the No. 13 area of 17,280 acres, however, would have unacceptable impact on essential Defense activities. Specifically, opening for exploration and exploitation the area in W-151 west of 86°20' west longitude would constrain to an unacceptable degree testing and training

for two essential activities based on Eglin AFB. Specifically, these related to the highly important and costly Electromagnetic Test Environment located on Santa Rosa Island and certain high altitude, air-to-air missile engagements with drones (BOMARCs) launched from Santa Rosa Island. During the period 15 May to 30 August, staff and Secretarial discussions occurred between Defense and Interior. On 30 August an agreement was reached that Interior would proceed with offering for lease the areas shown on the sketch Numbered 2 through 12 and 14 inclusive and that portion of the No. 1 area east of 86°20' west longitude. This agreement permits examination and possible exploitation of the oil/gas in a major portion of the area concerned but without undue impact on DoD activities.

Interior has agreed that lease offerings will provide that low altitude over-flight in single and multiple formations of the leased areas will continue at subsonic and supersonic speeds over surface activity and down to an altitude of 500 feet above the highest obstruction. Furthermore, Defense and Interior are finalizing lease stipulations on the following matters:

a. Hold the Government harmless from any sonic or EM effect caused by the Operation of these aircraft and emitters.

b. Hold the Government harmless from any damage accidentally caused regardless of altitude, by the operation of these aircraft and emitters.

c. Allow control of their own EM emissions to the degree necessary to prevent damage to, or unacceptable interference with, the DoD flight test activities. Eglin Air Force Base would effect the necessary monitoring, coordination with operators, and control in this regard.

d. Each company operating boat or aircraft traffic into the Warning area shall enter into an agreement with the Armament Development Test Center, Eglin Air Force Base, Florida, prior to commencing such traffic. The agreement will provide for positive control of boat and aircraft traffic operating into the Warning area.

The only activity which may have to be moved are the two Navy underwater acoustic platforms of the Panama City Naval Coastal Systems Laboratory near Tyndall AFB. The number of employees that would be involved are approximately 10. Examination is now being made as to the most suitable place for relocation. If they must be moved the estimated cost of the move would be approximately \$400K.

TENTATIVE SCHEDULE — OCS LEASING

June 1971

[illegible]

*This schedule is subject to annual revision

July 1973

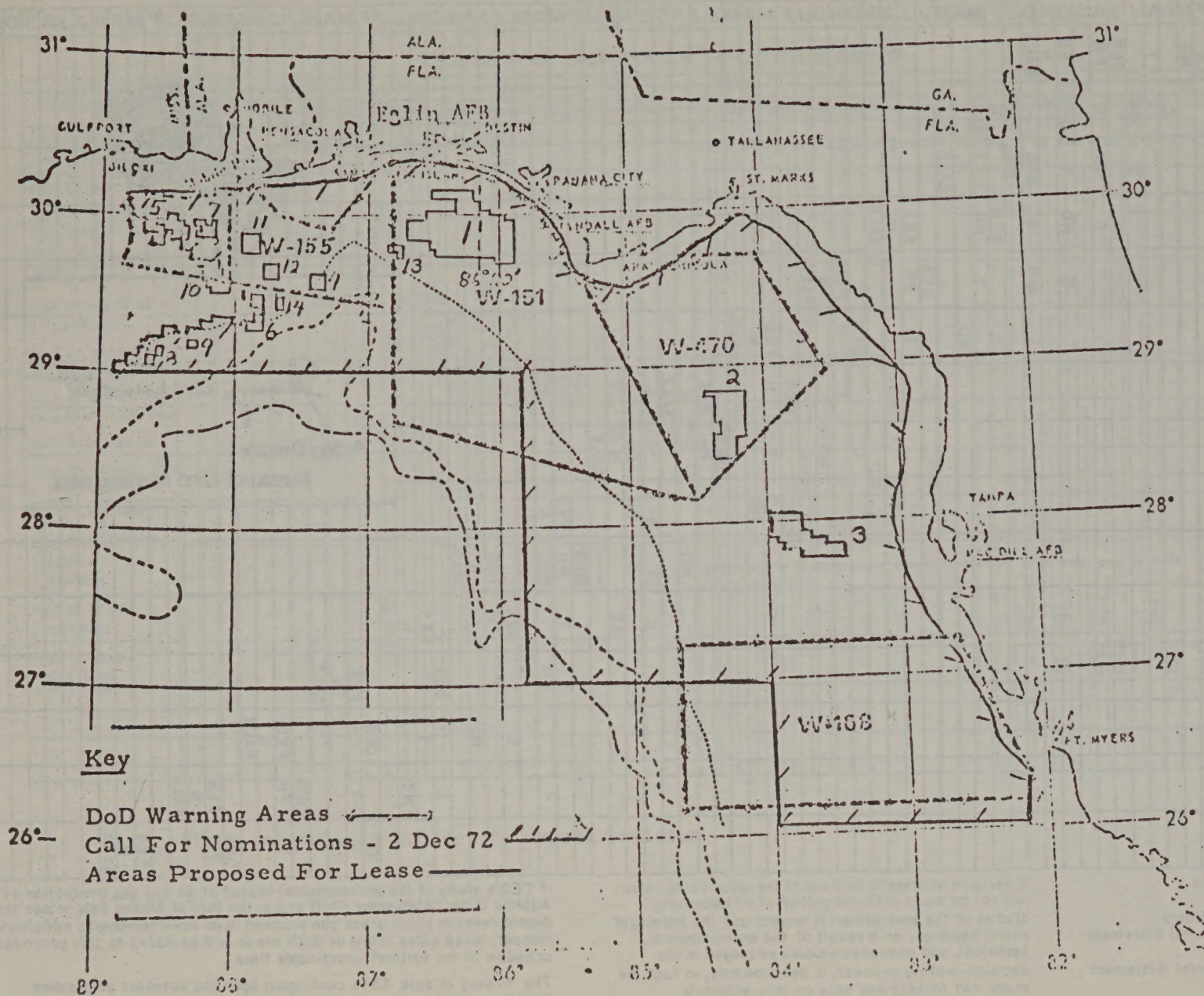
George L. Turcott
Acting Director
Bureau of Land Management

A decision whether to hold any of the lease sales listed will not be made until completion of all necessary studies of the environmental impact and the holding of public hearings; as a result of the environmental, technical, and economic studies employed in the decision-making process, a decision may, in fact, be made not to hold any sale on this schedule.

If CEQ's study of the environmental impact of oil and gas production on the Atlantic Outer Continental Shelf and in the Gulf of Alaska determines that development in these areas can proceed in an environmentally satisfactory manner, lease sales in one or both areas will be added to this proposed schedule at the earliest practicable time.

The holding of sale 43 is contingent upon the outcome of pending litigation with Alaska regarding jurisdiction over this area.

DOD WARNING AREAS IN THE OCS OF THE EASTERN GULF COAST



MATRIX APPENDIX

The following contains a presentation of a matrix table for each individual tract proposed for offering in this sale. The following table will appear at the end of each matrix table and should be completed in accordance with the following:

1	2	3	4	5
---	---	---	---	---

1. Tract Name

2. Acreage

3. Section, Range and Township ATTACHMENT J

4. Section, Range and Township

MATRIX APPENDIX

5. Section, Range and Township

6. Section, Range and Township

7. Section

8. Tract Number

9. Approximate distance in miles from block to shore of nearest island

10. Approximate water depth of block in feet

11. Estimated type of vegetation

12. Soil

13. Use

14. Other uses and notes

MATRIX APPENDIX

The following contains a presentation of a matrix table for each individual tract proposed for offering in this sale. The following code will appear at the top of each matrix table and should be translated in accordance with the following.

1	2	3	4	5
---	---	---	---	---

1. Leasing Area

M = Mobile

MS = Mobile South No. 1

PS = Pensacola South No. 1

AS = Apalachicola South

TS = Tarpon Springs

T = Tampa

2. Tract Number

3. Approximate statute miles from block to shore or nearest island

4. Approximate water depth of block in feet

5. Estimated type of production

O = Oil

G = Gas

O & G = Oil and Gas

In addition the following legend will explain the letter headings for columns within each matrix table:

IM = Importance

PR = Proximity

F(ST) = Impact Factor - Structures

F(OS) = Impact Factor - Oil Spills

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ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

M 1 15 70 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.5	50
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.5	40
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.5	40
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

M 2 15 70 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.5	50
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.5	40
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.5	40
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

M 3 16 70 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.5	50
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.5	40
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80*	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.5	40
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

* Troct is Partially within 2 Shipping Lanes

M 4 17 70 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.4	32
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.4	32
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 5 19 600 0:G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas	20	0.0	0	100	0.3	30
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.8	64	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.4	32
Commercial Fishing	80	0.4	32	80	1.0	80
Sport Fishing	0	0.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 6 18 380 0:G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas	20	0.0	0	100	0.3	30
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.8	64	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.4	32
Commercial Fishing	80	0.4	32	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 7 20 320 0:G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.3	30
Unique & Highly Productive Areas	20	0.0	0	100	0.3	30
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.3	24
Commercial Fishing	80	0.4	32	80	0.9	72
Sport Fishing	0	0.9	0	80	0.9	72
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 8 19 320 0:G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas	20	0.0	0	100	0.3	30
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.3	24
Commercial Fishing	80	0.4	32	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 9 32 540 oig

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.4	32	80	0.3	24
Sport Fishing	0	0.4	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 10 34 540 oig

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.3	24
Sport Fishing	0	0.4	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 11 62 490 oig

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 12 57 240 oig

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	0.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 13 57 245 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.8	64	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 14 53 195 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.0	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 15 52 200 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 16 49 160 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.0	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 17 50 165 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.0	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 18 43 130 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.1	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 19 43 140 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 20 43 150 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.8	64	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 21 44 130 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 22 40 120 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.2	16	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 23 41 125 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 24 40 130 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.8	64	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 25 40 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 26 37 115 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 27 38 115 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 28 38 120 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 29 37 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 30 34 110 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 31 35 110 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 32 35 115 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 33 34 120 0 of G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 34 34 120 0 of G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.2	16	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 35 34 115 0 of G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 36 31 110 0 of G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.2	16	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 37 31 110 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 38 31 110 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 39 28 100 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 40 28 105 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 41 28 100 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of						
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 42 20 75 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.3	30
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of						
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.3	24
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.3	24
Commercial Fishing	80	1.0	80	80	0.9	72
Sport Fishing	0	1.0	0	80	0.9	72
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 43 23 80 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.3	30
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of						
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.3	24
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.3	24
Commercial Fishing	80	1.0	80	80	0.6	48
Sport Fishing	0	1.0	0	80	0.6	48
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 44 16 70 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.5	50
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of						
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.5	40
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.5	40
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 45 19 70 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.4	32
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.4	32
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	0.0	0	80	1.0	80
Ordnance Disposal Area	100	0.0	0	0	0.0	0

MS 46 19 75 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.4	32
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.8	64	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.4	32
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordnance Disposal Area	100	0.0	0	0	0.0	0

MS 47 21 85 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.3	30
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.3	24
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.3	24
Commercial Fishing	80	1.0	80	80	0.8	64
Sport Fishing	0	1.0	0	80	0.8	64
Ordnance Disposal Area	100	0.0	0	0	0.0	0

* This tract lies partially within 2 Shipping lanes

MS 48 22 85 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.3	30
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.3	24
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.3	24
Commercial Fishing	80	1.0	80	80	0.7	56
Sport Fishing	0	1.0	0	80	0.7	56
Ordnance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 49 23 90 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.3	30
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.3	24
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.8	64	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.3	24
Commercial Fishing	80	1.0	80	80	0.7	56
Sport Fishing	0	1.0	0	80	0.7	56
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 50 14 65 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.5	50
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.5	40
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.2	16	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.5	40
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 51 16 70 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.5	50
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	0.0	40
Beaches	40	0.0	0	80	0.5	40
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.2	16	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.5	40
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 52 19 70 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.4	32
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.4	32
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

MS 53 19 80 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.4	32
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.4	32
Commercial Fishing	80	1.0	80	80	0.8	64
Sport Fishing	0	1.0	0	80	0.8	64
Ordinance Disposal Area	100	0.0	0	0	0.0	0

MS 54 19 80 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.4	40
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.4	32
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.8	64	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.4	32
Commercial Fishing	80	1.0	80	80	0.8	64
Sport Fishing	0	1.0	0	80	0.8	64
Ordinance Disposal Area	100	0.0	0	0	0.0	0

PS 55 61 330 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

PS 56 58 260 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 57 55 235 0FG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

PS 58 53 205 0FG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	1.0	80	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

PS 59 53 210 0FG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

PS 60 50 180 0FG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 61 51 240 DEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.2	20	0	0.8	0

PS 62 52 260 DEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.2	20	0	0.9	0

PS 63 44 130 DEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.2	16	20	0.9	18
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

PS 64 46 220 DEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 65 47 240 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.4	32	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.4	32	80	0.0	0
Sport Fishing	0	0.4	0	80	0.0	0
Ordinance Disposal Area	100	0.2	20	0	0.7	0

PS 66 41 125 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.6	48	20	1.0	20
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

PS 67 36 150 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	0.4	40	0	1.0	0

PS 68 34 140 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.2	20	0	1.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 69 41 210 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	1.0	100	0	1.0	0

PS 70 40 165 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	1.0	100	0	1.0	0

PS 71 38 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	1.0	100	0	1.0	0

PS 72 37 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	1.0	100	0	1.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 73 35 135 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.8	80	0	1.0	0

PS 74 33 140 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.6	60	0	1.0	0

PS 75 31 140 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.4	32
Sport Fishing	0	0.6	0	80	0.4	32
Ordinance Disposal Area	100	0.4	40	0	1.0	0

PS 76 38 190 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	1.0	100	0	1.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 77 37 155 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	1.0	100	0	1.0	0

PS 78 36 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	1.0	100	0	1.0	100

PS 79 35 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.8	80	0	1.0	0

PS 80 32 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.8	80	0	1.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 81 30 135 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.4	32
Sport Fishing	0	0.6	0	80	0.4	32
Ordinance Disposal Area	100	0.6	60	0	1.0	0

PS 82 29 135 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.4	32
Sport Fishing	0	0.6	0	80	0.4	32
Ordinance Disposal Area	100	0.4	40	0	1.0	0

PS 83 36 180 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	0.8	80	0	1.0	0

PS 84 34 150 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	0.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.8	80	0	1.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 85 33 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.8	80	0	1.0	0

PS 86 32 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.8	80	0	1.0	0

PS 87 30 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.4	32
Sport Fishing	0	0.6	0	80	0.4	32
Ordinance Disposal Area	100	0.6	60	0	1.0	0

PS 88 28 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.4	40	0	1.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 89 26 130 0.6G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.2	20
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.2	16
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.2	16
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.2	20	0	1.0	0

PS 90 33 165 0.6G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.6	60	0	0.0	0

PS 91 32 145 0.6G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.6	60	0	1.0	0

PS 92 30 130 0.6G

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.4	32
Sport Fishing	0	0.6	0	80	0.4	32
Ordinance Disposal Area	100	0.6	60	0	1.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 93 29 125 oig

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.4	32
Sport Fishing	0	0.6	0	80	0.4	32
Ordinance Disposal Area	100	0.6	60	0	1.0	0

PS 94 28 125 oig

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.4	40	0	1.0	0

PS 95 26 125 oig

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.2	20
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.2	16
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.2	16
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.2	20	0	0.9	0

PS 96 30 145 oig

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.4	32
Sport Fishing	0	0.6	0	80	0.4	32
Ordinance Disposal Area	100	0.4	40	0	1.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 97 29 130 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.4	32
Sport Fishing	0	0.6	0	80	0.4	32
Ordinance Disposal Area	100	0.4	40	0	1.0	0

PS 98 28 125 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.1	10
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.1	8
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.1	8
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.4	40	0	1.0	0

PS 99 26 120 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.2	20
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.2	16
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.2	16
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.4	40	0	1.0	0

PS 100 27 130 OEG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.2	20
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.2	16
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.2	16
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.2	20	0	0.8	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

PS 101 26 125 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.2	20
Unique & Highly Productive Areas	20	0.0	0	100	0.1	10
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.2	16
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.2	16
Commercial Fishing	80	0.6	48	80	0.5	40
Sport Fishing	0	0.6	0	80	0.5	40
Ordinance Disposal Area	100	0.2	20	0	0.8	0

AS 102 96 175 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	0.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 103 96 170 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 104 93 170 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

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ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

AS 105 94 155 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 106 90 160 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 107 91 150 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	0.0	0
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 108 87 150 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	0.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

AS 109 88 130 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	80	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 110 89 130 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	0.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 111 84 150 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	0.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 112 85 135 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

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ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

AS 113 87 135 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 114 82 135 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 115 84 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 116 80 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

AS 117 81 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 118 76 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 119 79 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 120 79 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

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ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

AS 121 73 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 122 75 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 123 76 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 124 71 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas Biota Seaward of	20	0.0	0	100	0.0	0
Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

AS 125 72 125 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 126 74 125 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 127 66 130 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 128 68 125 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

AS 129 69 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

AS 130 71 120 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	1.0	80	80	1.0	80
Sport Fishing	0	1.0	0	80	1.0	80
Ordinance Disposal Area	100	0.0	0	0	0.0	0

TS 131 56 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	0.6	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

TS 132 53 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	0.6	48
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

TS 133 50 120 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

TS 134 56 130 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

TS 135 54 125 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

TS 136 51 120 0.6

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

T 137 44 120 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

T 138 40 110 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

T 139 37 105 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.2	16
Sport Fishing	0	0.6	0	80	0.2	16
Ordinance Disposal Area	100	0.0	0	0	0.0	0

T 140 34 100 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.3	24
Sport Fishing	0	0.6	0	80	0.3	24
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

T 141 50 130 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

T 142 47 125 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordinance Disposal Area	100	0.0	0	0	0.0	0

T 143 43 120 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

T 144 40 110 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.1	8
Sport Fishing	0	0.6	0	80	0.1	8
Ordinance Disposal Area	100	0.0	0	0	0.0	0

ANALYSIS OF POSSIBLE ADVERSE ENVIRONMENTAL IMPACT

T 145 53 130 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordnance Disposal Area	100	0.0	0	0	0.0	0

T 146 50 125 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordnance Disposal Area	100	0.0	0	0	0.0	0

T 147 47 120 0EG

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20	0.0	0	100	0.0	0
Unique & Highly Productive Areas	20	0.0	0	100	0.0	0
Biota Seaward of Estuary/Marsh/Nursery Areas	0	1.0	0	40	1.0	40
Beaches	40	0.0	0	80	0.0	0
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80	0.0	0	20	0.0	0
Outdoor Recreation	40	0.0	0	80	0.0	0
Commercial Fishing	80	0.6	48	80	0.0	0
Sport Fishing	0	0.6	0	80	0.0	0
Ordnance Disposal Area	100	0.0	0	0	0.0	0

SIGNIFICANT RESOURCE FACTORS	IMPACT FACTORS					
	Structures			Oil Spills (1000 bbl+)		
	IM	PR	F(ST)	IM	PR	F(OS)
<u>Natural Resource Systems:</u>						
Refuges/Management Areas	20			100		
Unique & Highly Productive Areas	20			100		
Biota Seaward of Estuary/Marsh/Nursery Areas	0			40		
Beaches	40			80		
<u>Coastal Activities/Multiple Uses:</u>						
Shipping	80			20		
Outdoor Recreation	40			80		
Commercial Fishing	80			80		
Sport Fishing	0			80		
Ordnance Disposal Area	100			0		

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D. C. 20250

APR 17, 1991

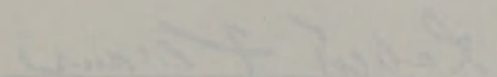
NOTICE TO LESSEES AND OPERATORS OF OIL AND GAS LEASES
IN THE OCS OIL AND GAS OPERATIONS LEASE

Attached is a copy of the latest working draft of the regulation for
for both drilling and production, as well as the findings

list of potential areas of inspection and the list of actions attendant
thereof. This is the first time that the regulation has been
and incorporated from given to members of the OCS OIL AND GAS OPERATIONS LEASE

GEOLOGICAL SURVEY, OCS OIL AND GAS OPERATIONS LEASE
MANAGEMENT PROGRAM

- is the Director's Office on May 1, 1991. The following are the items to be
are to be included in the report to be submitted to the Director's Office on May 1, 1991.
- (1) CODE BOOK
 - (2) INSPECTION REPORT
DRILLING
 - (3) INSPECTION REPORT
PRODUCTION
- This office is hereby notified that no later than July 15, 1991


Robert F. Williams
Assistant Director

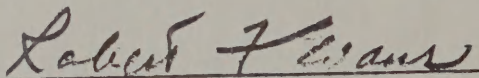
Attachment

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF COAST REGION

May 27, 1971

NOTICE TO LESSEES AND OPERATORS OF FEDERAL OIL AND GAS LEASES
IN THE OUTER CONTINENTAL SHELF, GULF COAST REGION

Attached is a copy of the latest working draft of the inspection forms for both drilling and producing operations, as well as the itemized list of potential areas of inspection and the list of actions attendant thereto. This is the latest updating of these forms and instructions and supersedes those given to members of the Offshore Operators Committee in the Director's Office on May 20, 1971. These working draft copies are to be utilized by our personnel from now until they are further modified. Your remarks concerning any needed improvement in these forms or clarification of the itemized list should be addressed to this office whereby we may receive them no later than July 19, 1971.


Robert F. Evans
Regional Oil and Gas Supervisor

Attachments

**GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
GULF COAST REGION**

**OCS LEASE MANAGEMENT PROGRAM
GULF OF MEXICO**

**LIST OF POTENTIAL ITEMS OF NON-COMPLIANCE AND
ENFORCEMENT ACTION**

MAY 1971

PREFACE

This list of potential items of non-compliance (PINC's) covers oil and gas operations on the Outer Continental Shelf in the Gulf of Mexico. They are derived from the requirements found in Title 30 of the Code of Federal Regulations and OCS Orders nos. 1-7, dated August 28, 1969 and nos. 8 and 9 dated October 30, 1970. The PINC's are organized more or less chronologically with respect to the usual sequence of events in the exploration and development of oil and gas on an OCS lease. Reference is made in the left-hand margin of the list to the appropriate chapter and paragraph of Title 30 or OCS Order. Each PINC is sequentially numbered for easy reference.

Each specific PINC is presented in the form of a question. If the lease operator has fulfilled the requirement, the question can be answered "yes", and he is in compliance. If the question is answered "no", then an incident of non-compliance exists.

Some of the PINC's include an effective date to be in compliance as a result of time limits specified in OCS Orders 8 and 9. Notes in the right-hand margin of the list should help the inspector locate a particular PINC. The letters to the left of the PINC number indicate the enforcement action to be taken if an incident of non-compliance exists. Specific enforcement action is described beginning on page 187.

GENERAL REQUIREMENTS

The following are general requirements:

Authority

- 250.46 The lessee shall perform all operations in a safe and workmanlike manner.
- 250.45 The lessee shall take all steps necessary to prevent accidents and fires.
- 250.41 The lessee shall take all necessary precautions to keep all wells under control at all times.
- 250.41(a) The lessee shall utilize only personnel trained and competent to drill and operate oil and gas wells.
- 250.41(a) The lessee shall utilize and maintain materials, high pressure fittings and equipment necessary to insure the safety of operating conditions and procedures.
- 7.1.C(3) The operators personnel shall be thoroughly instructed in the technique of equipment maintenance and operation for the prevention of pollution.
- 7.1.C(3) Non-operator personnel shall be informed in writing, prior to executing contracts, of the operator's obligation to prevent pollution.
- 250.43 Discharged wastewater shall not create conditions which will adversely affect public health, or the legitimate use of the waters.
- 250.43 The lessee shall remove any pollutant which threatens aquatic life, public or private property.
- 7.1.C(1) All production facilities shall be such as are necessary to control the maximum anticipated pressures and production.

These general requirements are implemented by the following specific potential items of non-compliance:

GENERAL POLLUTION CONTROL EQUIPMENT AND PROCEDURES

<i>Authority</i>	<i>Enforcement Action</i>		<i>Notes</i>
CONTAINMENT			
7.1.C(2) 8.2.A(3)	W/P(1)	1. Is the platform or fixed or mobile structure equipped with curbs, gutters, and drains in all deck areas in a manner necessary to collect all contaminants, unless drip pans or equivalent are placed under equipment?	Curbs, Gutters, and Drains
7.1.C(2) 8.2.A(3)	P	2. Are all drains piped to a tank or a sump equipped to automatically maintain the oil at a level sufficient to prevent discharge of oil into the Gulf waters or has an alternative method been approved by the Supervisor?	Automatic Sump
8.2.A(3)	P	3. Does the pollution control system prevent spilled oil from flowing into the wellhead area?	Oil in Well- Head Area
DISPOSAL			
250.43(a) 7.1.A(1),(3) 7.1.B(1)	P/Z	4. Is the operator not disposing of oil in any form including drilling mud, drill cuttings, sand and other solids containing oil, into the waters of the Gulf?	Oil Pollution
250.43(a) 7.1.A(3)	Z	5. If the drilling mud contains toxic substances, is it disposed of into the Gulf with neutralization?	Toxic Substances
7.1.A(2)	P/Z	6. Is the operator not disposing of liquid waste materials containing harmful substances into the waters of the Gulf without treatment?	Liquid Waste Pollution
7.1.B(2)	W	7. Are mud containers and other solid waste materials incinerated or transported to shore for disposal?	Solid Waste
INSPECTIONS			
7.2.A(1)	W	8. Are pollution inspections of manned facilities made daily?	Manned Facilities
7.2.A(2)	W	9. Are unattended facilities inspected at frequent intervals?	Unmanned Facilities
SPILLS			
250.43(a) 7.2.B(1)	W	10. Are all spills or leakage of oil and liquid pollutants recorded by the operator and available for inspection by the Supervisor?	Spill Records
250.43(a)	W	11. Are all spills or leakage of oil, etc., reported orally to the District Engineer without delay?	Oral Reports
250.43(a) 7.2.B(2),(3)	W	12. Are all spill reports of 15 barrels or more confirmed in writing?	Confirma- tion Spill Reports
250.43(a) 7.2.B(3)	W	13. Are all spills or leakage of oil, etc., of more than 50 bbl, and those which cannot be immediately controlled reported orally without delay to the Supervisor, district engineer, Coast Guard, and Regional Director, FWQA (EPA)?	More than 50 bbl. Spills

7.1.C(4)	W	14. Do operators notify each other upon observation of equipment malfunction or pollution resulting from another's operation?	Other Operator's Spills
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CONTINGENCY PLAN AND EQUIPMENT

250.43(a) 7.3.A,B	W	15. Does operator have an emergency plan for controlling and removing pollution filed with the Supervisor which provides for: <ul style="list-style-type: none"> a. Standby pollution control equipment immediately available to the operator at a land base location? b. Regular inspection and maintenance of such equipment? c. Approval by the Supervisor of such equipment and the land base location and of any changes in equipment and location? 	Emergency Plan and Pollution Control Equipment
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SEWAGE DISPOSAL

8.2.A(9)	P(2)	16. Has a sewage disposal system been installed?—Effective 10-30-71	Sewage Disposal
8.2.A(9)	P(2)	17. Does the sewage effluent following treatment contain 50 ppm or less of BOD, 150 ppm or less of suspended solids, and have a minimum chlorine residual of 1.0 mg/liter after a minimum retention time of 15 minutes?—Effective 10-30-71	Effluent Standards

DRILLING OPERATIONS (OFFICE RECORDS)

250.31	W	18. If operations are not conducted by the record owner, has the lessee submitted to the Supervisor a Designation of Operator prior to the operator commencing operations?	Designation of Operator
250.32	W	19. If the Supervisor requested it, did the lessee designate a representative or local agent empowered to receive notices and comply with orders of the Supervisor?	Designation of Representative
250.34(a),(b)	Z	20. Has the lessee submitted to the Supervisor a lease exploratory or development plan for approval prior to commencing operations?	Exploratory/Development Plan
250.34(c) 250.91	Z	21. Has the Application for Permit to Drill been approved prior to commencing operations?	Application for Permit to Drill
250.11 2.0	W	22. If more than five development wells have been drilled in this field, (if there were less than five development wells in the field on August 28, 1969) has the operator applied to the Supervisor to establish field rules?	Field Rules
250.11 250.34(c) 2.0	Z	23. If the Supervisor has issued field rules, is the development well being drilled in accordance with the provisions of the appropriate field rules?	Development Well

250.93	W	24. Has the operator submitted a separate Monthly Report of Operations for the lease beginning with the month in which drilling operations were initiated which includes all the information required by 30 CFR 250.93?	Monthly Report of Operations
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DRILLING OPERATIONS (FIELD INSPECTION)

CASING AND CEMENTING PROGRAM

250.41(a)(1) 2.1.A.,B.,C.,D.	Z	25. Are all casing strings new pipe or equivalent capable of withstanding collapse, bursting, tensile, and other stresses?	New Pipe Requirements
250.41(a)(1) 2.1.A	Z	26. Is the drive or structural casing set in accordance with the requirements of OCS Order No. 2 or field rules?	Drive Casing
250.41(a)(1) 2.1.B(1),(2)	Z	27. Has the following casing been set and cemented in accordance with the requirements of OCS Order No. 2 or field rules? a. Conductor casing. b. Surface casing.	Conductor and Surface Casing
250.41(a)(1) 2.1.B(2)	Z	28. If there were any indications that the surface casing did not cement properly: a. Was a temperature or cement bond survey run? b. Was appropriate remedial action taken?	Bond or Temperature Log
250.41(a)(1) 2.1.C	Z	29. Has the intermediate casing been set properly to cover and isolate all hydrocarbon zones and to isolate abnormal pressure intervals from normal pressure intervals in accordance with OCS Order No. 2 or field rules?	Intermediate Casing
250.41(a)(1) 2.1.D	Z	30. Has the production casing been set and cemented in a manner to isolate all hydrocarbon zones in accordance with OCS Order No 2?	Production Casing
250.41(a)(1) 2.1.D	Z	31. If a liner is used as intermediate or production casing: a. Was the seal pressure tested? b. Was the test recorded in driller's log?	Liner Seal Test
250.41(a)(1) 2.1.E	Z	32. Have all casing strings, except the drive or structural casing, been pressure tested using minimum pressures given in OCS Order No. 2 (or field rules) prior to drilling the plug after cementing?	Pressure Tests
250.41(a)(1) 2.1.E	W	33. Are all casing pressure tests recorded in the driller's log?	Pressure Tests Recorded
250.41(a)(1) 2.1.E	Z	34. Has appropriate remedial action (recementing, repair, etc.) been taken if there was any indication of a leak during the pressure tests?	Remedial Action

250.41(a)(1) 2.1.E	Z	35. Did the operator wait 24 hours after cementing any casing before continuing to drill? (Note: If cementing under pressure, drilling can resume in 8 hours for conductor casing and 12 hours for all other strings)	W.O.C. Time
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MUD PROGRAM

250.41(a)(2) 2.3	Z	36. Are sufficient quantities of mud readily available to insure well control?	Quantity of Mud
250.41(a)(2) 2.3	Z	37. Is the drilling mud program adequate to prevent blowouts?	
250.41(a)(2) 2.3.A	Z	38. Is the mud properly conditioned by circulating from bottom to top with the drill pipe just off the bottom of the hole before starting out of hole?	Mud Control
250.41(a)(2) 2.3.A	Z	39. Is the annulus filled with mud before the mud level drops 100 feet when coming out of the hole with the drill pipe?	Keeping Hole Full
250.41(a)(2) 2.3.A	Z	40. Is a mechanical device for measuring the amount of mud needed to fill the hole used?	Measuring Device
250.41(a)(2) 2.3.A	Z	41. Is the required procedure described in OCS Order 2, Paragraph 3.A followed whenever there is an indication of swabbing or an influx of formation fluids?	Swabbing
250.41(a)(2) 2.3.B	Z	42. Is mud testing equipment maintained on the drilling platform at all times?	Test Equipment
250.41(a)(2) 2.3.B	Z	43. Are mud tests performed daily, or more frequently as conditions warrant?	Mud Tests
250.41(a)(2) 2.3.B	W	44. Are the mud tests recorded in the driller's log?	Records
250.41(a)(2) 2.3.B(1)	Z	45. Is a recording mud pit level indicator installed on the derrick floor and used after setting and cementing conductor casing?	Mud Pit Level Indicator
250.41(a)(2) 2.3.B(1)	Z	46. Is an audio or visual warning device on mud pit level indicator installed on the derrick floor and used after setting and cementing conductor casing?	Warning Device
250.41(a)(2) 2.3.B(2)	Z	47. Is a mud volume measuring device installed on the derrick floor and used after setting and cementing conductor casing?	Mud Vol- ume Measur- ing
250.41(a)(2) 2.3.C	Z	48. Is a mud return indicator installed on the derrick floor and used after setting and cementing conductor casing?	Mud Return Indicator

BLOWOUT PREVENTORS

250.41(a)(3) 2.2.A	Z	49. Before drilling below the conductor casing string, has the operator installed one remotely controlled bag-type blowout preventor and equipment to circulate the drilling fluid to the drilling structure or vessel?	Conductor Casing
250.41(a)(3) 2.2.A	Z	50. Is a large diameter pipe with control valves installed on the conductor casing below the BOP to permit diversion of hydrocarbons and other fluids?	Diverter
250.41(a)(3) 2.2.A	Z	51. If the blowout preventer is on the Gulf floor are the choke and kill lines equipped to permit the diversion of hydrocarbons and other fluids?	Subsea B.O.P.
250.41(a)(3) 2.2.B	Z	52. Before drilling below the surface casing has the operator installed: <ul style="list-style-type: none"> a. The following remotely controlled, hydraulically operated blowout preventers with a working pressure which exceeds the maximum anticipated surface pressure: <ul style="list-style-type: none"> i. One bag-type? ii. One equipped with pipe rams? iii. One equipped with blind rams? b. A drilling spool with side outlets if side outlets are not provided in the blowout preventer body? c. A choke line? d. A kill line? e. A fill-up line? 	Surface Casing
2.2.C	Z	53. Before drilling below the intermediate casing has the operator installed: <ul style="list-style-type: none"> a. Four remotely controlled, hydraulically operated blowout preventers with a working pressure which exceeds the maximum anticipated surface pressure including: <ul style="list-style-type: none"> i. One bag-type? ii. One equipped with pipe rams? iii. One equipped with blind rams? b. A drilling spool with side outlets if side outlets are not provided in the blowout preventer body? c. A choke manifold? d. A kill line? e. A fill-up line? 	Interme- diate Casing
250.41(a)(3) 2.2.D	Z	54. Do accumulators or accumulators and pumps maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic blowout preventors?	Accumu- lator Pressure Capacity
250.41(a)(3) 2.2.E	Z	55. Is a back pressure valve in the open position maintained on the rig floor at all times while drilling (an inside blowout preventor assembly)?	Safety Valves

250.41(a)(3) 2.2.E	Z	56. Is a drill string safety valve in the open position maintained on the rig floor at all times while drilling?	
250.41(a)(3) 2.2.E	Z	57. Is a separate back pressure valve and drill string safety valve maintained in an open position on the rig floor which will fit all pipe in the drill string?	Drill String Valves
250.41(a)(3)	Z	58. Is a kelly cock installed below the swivel, and an essentially full opening kelly cock installed at the bottom of the kelly of such design that it can be run through the blowout preventors?	Kelly Cock
250.41(a)(3) 2.2.D	Z	59. Are the ram-type blowout preventors and related control equipment tested with water to the rated working pressure of the stack or casing (whichever is less) at the following times:	Water Test Ram-type BOP
		a. When installed?	
		b. Before drilling out after setting each casing string?	
		c. Not less than once a week while drilling?	
		d. Following repairs that require disconnecting a pressure seal in the BOP assembly?	
250.41(a)(3) 2.2.D	Z	60. While drill pipe is in use, are the ram-type blowout preventors actuated once each trip and at least once each day?	Operate Ram-type
250.41(a)(3) 2.2.D	Z	61. Is the bag-type blowout preventor water tested to 70 percent of the working pressure of the stack assembly or the casing (whichever is less) at the same times the ram-type BOP is tested?	Water Test Bag-type BOP
250.41(a)(3) 2.2.D	Z	62. Is the bag-type blowout preventor actuated on the drill pipe at least once each week?	Operate Bag-type
250.41(a) 250.41(a)(3) 2.2.D	Z	63. Is a blowout prevention <i>drill</i> held weekly for each drilling crew to insure that all equipment is operating and that the crews are properly trained?	Weekly BOP Drill
250.41(a)(3) 2.2.D	Z	64. a. Are all blowout preventor tests recorded in driller's log? b. Are all blowout preventor drills recorded in driller's log?	BOP Test Records

IDENTIFICATION

250.37 1.1	W	65. Is the platform or fixed structure identified with signs:	Identifica- tion of Platform
		a. Located at two diagonal corners of the structure?	
		b. Showing the company name, area, and block number?	
		c. With letters and figures not less than 12 inches high?	

PERSONAL SAFETY

250.46 Coast Guard	Z	66. For all personnel on the rig are there sufficient:	Personal Safety
		a. Life jackets?	
		b. Life rafts?	

AUXILIARY POWER SUPPLY

8.2.A(4)	P	67. Is there an auxiliary electrical power supply installed to provide emergency power capable of operating all electrical equipment required to maintain safety of operation, in the event the primary electrical power supply fails?	Auxiliary Power Supply
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ELECTRICAL SYSTEMS

8.2.A(8)(b),(c)	P(2)	68. Are all electrical generators, motors, and lighting systems installed, protected, and maintained in accordance with the most current edition of the National Electric Code and API RP 500A and B, as appropriate? (Note: Marine-armored cable or metal-clad cable may be substituted for wire in conduit in any area). Effective 10-30-71	General Electrical Systems
8.2.A(8)(a)	P(2)	69. Are all engines equipped with low-tension ignition systems containing rigid connections and shielded wiring capable of preventing an electrical discharge sufficient to ignite a combustible mixture?—Effective 10-30-71	Ignition Systems

PLATFORMS, WELLS, AND PRODUCTION EQUIPMENT (OFFICE RECORDS)

PLATFORM APPROVALS

250.19(a) 8.1	P	70. Has the operator submitted for approval a design application of a platform, fixed structure, or artificial island which contains all of the items listed in OCS Order No. 8.1, prior to erecting the structure?(Platforms erected or modified after 10-30-70.)	Platform Design Application
250.19(a) 8.1.C	P	71. Are detailed structural plans certified by a registered professional engineer on file and maintained by the operator or his designee?(Platforms erected or modified after 10-30-70)	Structural Plans on File

MULTIPLE COMPLETION

250.92 6.3.A(1)	Z	72. Was form 9-331 for multiple completions approved before completing wells?	Form 9-331 Approved
6.3.A(2)	Z	73. Are multiple completed zones that become intercommunicated immediately repaired to separate the zones after approval is obtained?	Repair Communicated Zones

TUBINGLESS COMPLETION

6.3.B(1)	Z	74. Are all tubing strings in a multiply completed hole run to the same depth below the deepest producible zone?	Tubing Strings Same Depth
6.3.B(2)	Z	75. Are tubing strings new pipe?	New Pipe
6.3.B(2)	Z	76. Does cement extend a minimum of 500 feet above the uppermost producible zone?	Cement

6.3.B(3)	Z	77. Has a temperature or cement bond log been run if lost circulation or other unusual circumstances occurred during cementing operations?	Temperature or Bond Log
250.92 6.3.B(4)	Z	78. Was form 9-331 for tubingless completions approved before completing well?	
250.38(b) 250.95	W	79. Did the operator submit a well completion report together with all required well records within 30 days of completion?	Well Completion Report

SUBSEQUENT WELL OPERATIONS

250.36 250.91 250.92	Z	80. Prior to commencing operations not previously approved such as deepening, plugging-back, repairing, acidizing or stimulating production, perforating, side tracking, squeezing, abandoning, or any similar operation, did the operator submit an application or notice to the Supervisor and obtain approval?	Subsequent Well Operations
250.92(b)	W	81. Did the operator on changing the condition of a well submit a detailed subsequent report of all work done and the results obtained?	Subsequent Report
250.93	W	82. Has the operator submitted a separate Monthly Report of Operations for the lease beginning with the month in which drilling operations were initiated which includes all the information required by 30 CFR 250.93?	Monthly Report of Operations

EQUIPMENT RECORDS

250.19(b) 9.1.A	W	83. Has the operator submitted records semi-annually showing the present status and past history of each control device on all oil and gas pipelines (located on platforms) including dates and details of inspection, testing, repairing, adjustment, and reinstallation?	Pipeline Control Device Records
8.2.A(1)	W	84. Has operator submitted records semi-annually to the Supervisor showing the present status and past history of each manual and automatic shut-in device used on all pressurized vessels and water separation facilities in service?	Shut-in Device Records
8.2.A(2) 5.5	W	85. Has the operator submitted records to the District Office semi-annually showing the present status and past history of each wellhead automatic shut-in device?	Submit Records
8.2.A.(2)(i)	P	86. Has the operator arranged (requested in writing) for a representative of the Geological Survey to witness a complete testing and inspection of the safety system: <ul style="list-style-type: none"> a. At the time production commenced? b. Within the last six months? 	Witnessed Tests

PRODUCED WATER DISPOSAL

- | | | | |
|-------------|---|--|------------------------|
| 8.2.A(5) | W | 87. Is the method and location of wastewater disposal approved by the Supervisor if location is other than into Gulf waters?—Effective 10-30-71 | Other Disposal Methods |
| 8.2.A(5)(b) | W | 88. Are the results of effluent sampling submitted annually to the Supervisor and does the report include dates, time, and location of samples, volumes of waste discharge on dates of sampling in barrels per day, and the results of the specific analysis and physical observations?—Effective 10-30-71 | Annual Report |

FIRE CONTROL SYSTEM

- | | | | |
|-------------|---|---|-------------------------|
| 8.2.A(6)(e) | W | 89. Has a diagram of the firefighting system been submitted to the District Office?—Effective 10-30-71 | Diagram Submitted |
| 8.2.A(6)(c) | W | 90. Are records of the firewater system pump tests submitted semi-annually to the District Office?—Effective 10-30-71 | Semi-annual Test Record |

GAS DETECTION SYSTEM

- | | | | |
|-------------|---|---|-------------|
| 8.2.A(7)(e) | W | 91. Was an application for the installation and maintenance of a gas detection system submitted to the District office for Approval?—Effective 10-30-71 | Application |
|-------------|---|---|-------------|

PLATFORM ABANDONMENT

- | | | | |
|----------|---|--|---------------------|
| 250.18.d | W | 92. Upon termination of the right of use and easement, did lessee remove platform and restore premises to the Supervisor's satisfaction? | Removal of Platform |
|----------|---|--|---------------------|

PLATFORMS, WELLS, AND PRODUCTION EQUIPMENT (FIELD OPERATIONS)

WELLHEAD AREA

- | | | | |
|-------|---|---|---------------------------|
| 6.1.A | Z | 93. Are all completed wells equipped with casingheads, wellhead fittings, valves, and connections with a rated working pressure equal to or greater than the surface shut-in pressure of the well? | Wellhead Equipment |
| 6.1.A | Z | 94. Are all completed wells equipped with connections and valves designed and installed to permit fluid to be pumped between any 2 strings of casing? | |
| 6.1.A | Z | 95. Are all completed wells with a surface pressure in excess of 5,000 psi equipped with two master valves on the tubing? | Two Master Valves |
| 6.1.A | W | 96. Are all completed wells equipped with wellhead connections assembled and tested prior to installation by a fluid pressure equal to the rated test pressure of the fitting to be installed? | Testing Wellhead Fittings |
| 6.1.B | Z | 97. Are any wells showing sustained pressure on the casinghead, or leaking gas or oil between the production casing and the next larger casing string, tested using the procedure described in OCS Order No. 6.1.B? | Casing Leak Test |

250.37 1.3	W	98. Is each completion individually identified at the wellhead by a legible sign painted on, or affixed to the well showing (1) the OCS lease number and (2) the well number?	Identification at Wellhead
8.2.A(2)(a) 5.5	Z	99. Are all well head assemblies equipped with an operable automatic fail-close valve?	Wellhead Automatic Safety Valve
8.2.A(2)(b)	Z	100. Are all flowlines from wellheads equipped with high-low pressure sensors located close to the wellhead and set to activate the automatic safety valve in the event of abnormal pressures (high or low) in the flowline?	Flowline Sensors
8.2.A(2)(a)	Z	101. Are automatic safety valves temporarily out of service (manually opened) flagged?	Flagged Automatic Safety Valve
8.2.A(2)(g)	Z	102. Is the operation of all automatic well head safety valves tested weekly?	Weekly Tests
8.2.A(2)(g)	Z	103. Is the holding pressure of all automatic well head safety valves tested monthly?	Monthly Tests
8.2.A(2)(g)	W	104. Are the results of all automatic wellhead safety valves tests recorded and maintained in the field?	Test Records

HEADERS AND CHECK VALVES

8.2.A(2)(c)	Z	105. Are all headers equipped with properly sealing check valves on the individual flowlines?	Check Valves
8.2.A(2)(c)	Z	106. If unprotected by a relief valve with connections to bypass the header, can the flowlines and valves from each well located upstream of and including the header valve, withstand the shut-in pressure of that well?	Flowlines and Valves withstand Shut-in Pressure
8.2.A(2)(h)	Z	107. Is the holding pressure of all check valves tested monthly?	Monthly Check Valve Tests
8.2.A(2)(h)	Z	108. If four consecutive monthly holding pressure tests of check valves are satisfactory to the Supervisor are these tests conducted at least quarterly?	Quarterly Check Valve Tests
8.2.A(2)(h)	W	109. Are the results of all check valve tests recorded and maintained in the field?	Check Valve Test Records

PRODUCTION VESSEL CONTROLS

8.2A(1)(a)	P(2)	110. Are all separators in service equipped with: <ul style="list-style-type: none"> a. An operable high-pressure shut-in sensor? b. An operable low pressure shut-in sensor? c. An operable low-level shut-in control? d. An operable relief-valve? 	Separators
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8.2.A(1)(e)	P(2)	111. Is the high pressure shut-in sensor set no higher than 5 percent below the rated or designed working pressure of the vessel?	High Pilot Setting
8.2.A(1)(e)	P(2)	112. Is the low pressure shut-in sensor set no lower than 10 percent below the lowest pressure in the operating pressure range on all vessels with a rated or designed working pressure of more than 400 PSI?	Low Pilot Setting
8.2.A(1)(e)	P(2)	113. On pressure vessels with a rated or designed working pressure less than 400 PSI is: <ul style="list-style-type: none"> a. The high-pressure sensor set according to the guidelines for pressure settings on vessels with a designed working pressure greater than 400 PSI, but not within 5 PSI of the vessel's rated working pressure? b. The low-pressure sensor set according to the guidelines for pressure settings on vessels with a designed working pressure greater than 400 PSI, but not lower than 5 PSI below the lowest pressure in the operating range? 	Low Pressure Vessel Pilot Settings
8.2.A(2)(c)	P(2)	114. If unprotected by a relief valve with connections to bypass the header, can the inlet valve to a separator, the flowline, and all equipment upstream of the valve, withstand shut-in wellhead pressure?	Inlet Valve
8.2.A(1)(d)	P(2)	115. Are all other hydrocarbon handling pressure vessels unless determined by the Supervisor to be protected in some other way, equipped with: <ul style="list-style-type: none"> a. An operable high-pressure shut-in sensor? b. An operable low-pressure shut-in sensor? c. An operable high-level shut-in control? d. An operable low-level shut-in control? e. An operable relief valve? 	Other Hydrocarbon Pressure Vessels
8.2.A(1)(a)	P(2)	116. Are all pressure vessels that can discharge to a flare equipped with an operable high-level control?	Discharge to Flare
8.2.A(1)(g)	P(2)	117. Are all flare lines equipped with a scrubber or similar separation equipment?	Flare Line Scrubber
8.2.A(1)(b)	P(2)	118. Are all pressure surge tanks equipped with: <ul style="list-style-type: none"> a. An operable high-pressure shut-in sensor? b. An operable low-pressure shut-in sensor? c. An operable high-level shut-in control? d. An operable relief valve? e. A flare line? 	Pressure Surge Tank
8.2.A(1)(c)	P(2)	119. Are all atmospheric surge tanks equipped with an operable high-level shut-in?	Atmospheric Surge Tank

8.2.A(1)(e)	P(2)	120. Are pilot-operated pressure relief valves equipped to permit testing with an external pressure source?	Relief Valves
8.2.A(1)(e)	P(2)	121. Are all spring loaded pressure relief valves: <ul style="list-style-type: none"> a. Equipped to permit testing with an external pressure source? b. If not so equipped, bench tested? 	
8.2.A(1)(e)	P(2)	122. Is pressure relief valve set no higher than the designed working pressure of the vessel?	Relief Valve Settings

PIPELINE CONTROLS ON PLATFORMS

250.19(b) 9.1.A(1)	PL	123. Are pipelines leaving a platform, receiving production from that platform equipped with: <ul style="list-style-type: none"> a. An operable high-pressure sensor to directly or indirectly shut-in the platform wells? b. An operable low-pressure sensor to directly or indirectly shut-in the platform wells? 	Departing Pipeline
250.19(b) 9.1.A(2)(a)	PL	124. Are pipelines delivering production to production facilities on a platform equipped with an operable automatic shut-in valve connected to the platform's automatic and remote shut-in system?	Incoming Pipelines
250.19(b) 9.1.A(2)(b)	PL	125. Are pipelines coming onto a platform equipped with a check valve?	Pipeline Check Valves
250.19(b) 9.1.A(2)(c)	PL	126. Are pipelines which cross a platform and do not deliver production to the platform, but may or may not receive production from the platform equipped with the following devices to activate an automatic shut-in valve located in the upstream portion of the pipeline at the platform and connected to either the platform automatic and remote shut-in system or to an independent remote shut-in system: <ul style="list-style-type: none"> a. An operable high-pressure sensor? b. An operable low-pressure sensor? 	Crossing Pipelines
250.19(b) 9.1.A(2)(d)	P(2)	127. Are pipeline pumps equipped with: <ul style="list-style-type: none"> a. An operable high-pressure shut-in device? b. An operable low-pressure shut-in device? 	Pipeline Pump Sensors

REMOTE SHUT-IN CONTROLS

8.2.A(2)(e)	P	128. Are all remote shut-in controls quick-opening valves?	Remote Shut-in Controls
8.2.A(2)(e)	P	129. Are remote shut-in controls located on: <ul style="list-style-type: none"> a. The helicopter deck? b. All exit stairway landings? c. On each boat landing? d. Others? 	Location

SUBSURFACE SAFETY DEVICES

250.41(b) 5.1	Z	130. Are all wells (completions) capable of flowing oil or gas: a. Equipped with an operable subsurface safety device? b. Installed at least 1,000 feet below the Gulf floor?	Subsurface Safety Device
250.41(b) 5.4	Z	131. If any well capable of flowing oil or gas does not have a subsurface safety device, did the operator request and receive approval for a waiver from the requirements of OCS Order No. 5?	Waiver of Safety Device
250.41(b) 5.6	Z	132. If a well is capable of flowing oil or gas, but is not equipped with a subsurface safety device, is a subsurface safety device available at the field location for use in the event of an emergency?	Availability of Sub- surface Safety Device
250.41(b) 5.2	Z	133. Has the subsurface safety device which is an integral part of the tubing string been tested at intervals not exceeding six months and replaced or a removable subsurface safety device installed if the test was unsatisfactory?	Integral Part of Tubing Device
250.41(b) 5.3	Z	134. If well was completed after August 28, 1969, is the tubing string equipped with a landing nipple to provide for setting a subsurface safety device?	Landing Nipple Installation
250.41(b) 5.3	Z	135. If the well has a high-flow rate or if it produces sand, are areas of turbulence above and below the subsurface safety device protected by a flow coupling or other protective equipment? (For tubing installations after 8-28-69)	Turbulence near Safety Valve
250.41(b) 5.2	Z	136. Has the subsurface safety device been removed and inspected and maintenance performed as indicated at not more than six month intervals or (for a device set in landing nipple) at not more than 12 month intervals?	Inspection of Subsur- face Safety Device
250.38(a) 5.8	W	137. Are records available (in the field) showing the present status and past history of each subsurface device including dates and details of inspection, testing, repairing, adjustment, and reinstallation?	Records Available in Field

IDENTIFICATION AND OTHER SAFETY EQUIPMENT

250.37 1.1	W	138. Is the platform or large fixed structure identified with signs: a. Located at two diagonal corners of the structure? b. Showing the company name, area, block number, and structure designation? c. With letters 196, and figures not less than 12 inches high?	Identifica- tion of
250.37 1.2	W	139. Is the single well or small structure identified with: a. At least one sign showing the company name, area, block number, and structure designation? b. Letters and figures not less than 3 inches high?	Identifica- tion of Single Well or Small Structure

250.46 Coast Guard	P	140. For all personnel on the platform are there sufficient: a. Life jackets? b. Life rafts (on manned platforms)?	Personnel Safety
8.2.A(2)(d)	P(2)	141. Are all pneumatic shut-in control lines equipped with fusible material at strategic points?	Fusible Material
8.2.A(2)(j)	W	142. Has a standard procedure for testing safety equipment been prepared and posted in a prominent place on the platform?	Test Procedure Posted
AUXILIARY POWER SUPPLY			
8.2.A(4)	P	143. Is there an auxiliary electrical power supply installed to provide emergency power capable of operating all electrical equipment required to maintain safety of operation, in the event the primary electrical power supply fails?	Auxiliary Power Supply
ELECTRICAL SYSTEMS			
8.2.A(8)(b),(c)	P(2)	144. Are all electrical generators, motors, and lighting systems installed, protected, and maintained in accordance with the most current edition of the National Electric Code and API RP 500A and B, as appropriate? (Note: Marine-armored cable or metal-clad cable may be substituted for wire in conduit in any area).—Effective 10–30–71.	General Electrical Systems
8.2.A(8)(a)	P(2)	145. Are all engines equipped with low-tension ignition systems containing rigid connections and shielded wiring capable of preventing an electrical discharge sufficient to ignite a combustible mixture? (Not applicable to diesel engines)—Effective 10–30–71	Ignition Systems
PRESSURE SENSOR TESTING			
8.2.A(1)(f)	P(2)	146. Are all pressure sensors equipped to permit testing with an external pressure source?	Pressure Sensors
8.2.A(1)(f)	P(2)	147. Have all pressure sensors been tested for proper pressure settings monthly: a. On flowlines? b. On pressure vessels?	Pressure Sensor Tests
8.2.A(2)(f)	P(2)	148. If four consecutive monthly pressure sensor tests are consistent to the satisfaction of the Supervisor are pressure sensor tests being conducted quarterly: a. On flowlines? b. On pressure vessels?	
8.8.A(2)(f)	W	149. Are the results of all pressure sensor tests recorded and maintained in the field?	Pressure Sensor Test Records

FIRE CONTROL SYSTEM

8.2.A(6)(e)	W	150. Is a diagram of the firefighting system, which shows the location of all equipment, posted on a prominent place on the platform?—Effective 10-30-71	Diagram Posted
• 250.46 8.2.A(6)(d) Coast Guard	P	151. Are portable fire extinguishers located in the living quarters and in other strategic areas?—Effective 10-30-71	Fire Extinguishers
8.2.A(6)(a)	P	152. Is a fixed automatic water spray system installed in all inadequately ventilated well head areas as these areas are defined in paragraph 9 of API RP 500A and in accordance with the most current edition of <i>National Fire Protection Association's Pamphlet No. 15</i> ?—Effective 10-30-71	Water Spray System in Wellhead Area
8.2.A(6)(b)	P	153. Is a firewater (or chemical) system of rigid pipe with fire hose stations installed to provide protection in areas where production handling equipment is located?—Effective 10-30-71	Fire Water System
8.2.A(6)(c)	P	154. Is there an alternate fuel or power source installed to provide continued pump operation during platform shut down unless an alternative firefighting system is provided?—Effective 10-30-71	Alternate Source or System
8.2.A(6)(c)	P	155. Are firewater systems pumps inspected and test-operated weekly?—Effective 10-30-71	Pump Inspections
8.2.A(6)(c)	W	156. Are records of the firewater system pump tests maintained in the field?—Effective 10-30-71	Field Records

GAS DETECTION SYSTEM

8.2.A(7)(f)	W	157. Is a diagram of all gas detection systems showing the location of all gas detection points posted in a prominent place on the platform?—Effective 10-30-71	Diagram Posted
8.2.A(7)(a)	P	158. Are gas detection systems located in all enclosed areas containing gas handling facilities or equipment and in other areas which are classified as hazardous areas as defined in API RP 500 and the <i>National Electric Code</i> ?—Effective 10-30-71	Location
8.2.A(7)(b)	P	159. Are all gas detection systems capable of continuously monitoring for the presence of combustible gas in the areas in which they are located?—Effective 10-31-71	Detection Capability
8.2.A(7)(c)	P	160. Does the gas detection system sound an alarm at some point below the lower explosive limit of 1.3 percent as shown in <i>Bureau of Mines Bulletin No. 503</i> ?—Effective 10-30-71	Alarm Level
8.2.A(7)(d)	P	161. Does the gas detection system trigger shut-in sequences and operate emergency equipment before the level exceeds 4.9 percent?—Effective 10-30-71	Shut-in Level

PRODUCED WATER DISPOSAL

8.2.A(5)(b)	P(2)	162. Is the oil content of the disposed water reduced to an average of not more than 50 parts per million?—Effective 10-30-71	Average Oil Content
8.2.A(5)(b)	P(2)	163. Is the wastewater system maintained in such a manner as to prevent the discharge of an effluent containing in excess of 100 ppm of total oil content?—Effective 10-30-71	Maximum Allowable Oil Content
8.2.A(5)(b)	P(2)	164. Is there a point prior to discharge into the receiving waters where a representative sample of the treated effluent can be obtained?—Effective 10-30-71	Sampling Station
8.2.A(5)(b)	P(2)	165. Are four effluent samples taken within a 24-hour period once a month and have the following determinations been made: Temperature, suspended solids, settleable solids, PH, total oil content, and volume obtained?—Effective 10-30-71	Monthly Samples
8.2.A(5)(b)	P(2)	166. Are samples taken and analyses performed in accordance with the American Society for Testing and Materials test D1340, "Oily Matter in Industrial Waste Water" or has the Supervisor approved an alternate method?—Effective 10-30-71	Method of Testing

PIPELINES (OFFICE RECORDS)

250.19(b) 9.2	W	167. Has the operator submitted for the Supervisor's approval, an application in duplicate, with drawings, plans, etc. as outlined in OCS Order No. 9.2 prior to installation?	Pipeline Application
250.19(b) 9.1.D	PL(2)	168. Is pipeline hydro-tested to 1.25 times the designed working pressure for a minimum of two hours prior to use?	Testing
250.19(b) 9.3	W	169. Has the operator notified the Supervisor after completion of installation of pipelines and submitted diagrams, drawings, and the records of the original hydrostatic pressure test as outlined in OCS Order No. 9.3?	Notification of Installation
250.19(b) 9.1.E	W	170. Are monthly inspection records maintained including dates, methods, and results for all inspections and submitted annually by April 1 to the Supervisor?	Records

PIPELINES (FIELD OPERATIONS)

250.19(b) 9.1.B	PL(2)	171. Is pipeline protected from loss of metal due to corrosion that would endanger the strength and safety of the lines, by extra thickness of metal, protective coating or cathodic protection?	Corrosion Protection
250.19(b) 9.1.C	PL(2)	172. Is pipeline installed in such a manner as to be compatible with trawling operations and other OCS users?	Other OCS Users
250.19 9.1.E	PL(2)	173. Is pipeline inspected for leaks at least monthly?	Inspection

250.19(b) 9.1.E	W	174. Are reports indicating the cause, effect, and remedial action taken regarding all leaks submitted to the Supervisor within one week following the occurrence of leaks?	Reporting Leaks
ABANDONMENT			
250.44 250.92(c)	R	175. Did the operator submit a detailed statement of the proposed work for abandonment of any well; provide the information specified in 30 CFR 250.92(c), and obtain approval prior to commencing operations?	Notice of Intent to Abandon
250.15 250.44 3.1.A	R(3)	176. Are all cement plugs spaced to extend 100 feet below the bottom to 100 feet above the top of any oil, gas, and fresh water zones in uncased portions of the well?	Spacing of Plugs
250.15 250.44 3.1.B.	R(3)	177. Is a cement plug placed in the deepest casing string (where there is open hole below the casing) as specified in OCS Order No. 3.1.B(1),(2), or (3)?	Isolation of Open Hole
250.15 250.44 3.1.B(3)	R(3)	178. Is the bridge plug set as specified in OCS Order No. 3.1.B(3) tested prior to placing subsequent plugs?	Testing Bridge Plug
250.15 250.44 3.1.C.	R(3)	179. Are perforated intervals plugged or isolated as specified in OCS Order No. 3.1.C?	Plugging Perforations
250.15 250.44 3.1.D	R(3)	180. Are all casing stubs plugged as specified in OCS Order No. 3.1.D.	Plugging of Casing Stubs
250.15 250.44 3.1.E.	R(3)	181. Is any annular space, extending to the Gulf floor and open to drilled hole below, plugged with cement?	Plugging of Annular Space
250.15 250.44 3.1.F.	R(3)	182. Is the surface plug of at least 150 feet, with the top plug within 150 feet of the Gulf floor, and in the shallowest string of casing extending to the surface?	Surface Plug
250.15 250.44 3.1.G	R(3)	183. Is the first plug below the top 150 foot plug tested as specified in OCS Order No. 3.1.G?	Testing Plugs
250.15 250.44 3.1.H	R(3)	184. Do each of the hole intervals between plugs contain mud fluid of sufficient density?	Mud
250.15 250.44 3.2	R(3)	185. Are temporarily abandoned drilling wells plugged in accordance with OCS Order 3.2?	Temporarily Abandoned Wells
250.15 250.44 3.1.I	W	186. Have all casing and piling been severed and removed to at least 15 feet below the Gulf floor?	Casing Removal
250.15 250.44 3.1.I	W	187. Has the location been dragged to clear the well site of any obstructions?	Removal of Obstructions

250.92(d)	W	188. Did the operator submit a detailed report of the manner in which the abandonment was accomplished?	Subsequent Report
NOTIFICATION OF ACCIDENTS AND FIRES			
250.45	W(4)	189. Has the Supervisor been notified immediately of all serious accidents and all fires?	Immediate Notification
250.45	W	190. Has a full written report been submitted within ten days?	Written Report
250.45	W	191. Has the Supervisor been notified of any other unusual condition, problem, or malfunction within 24 hours?	Other Unusual Conditions

ENFORCEMENT POLICY

OBJECTIVES

The adoption of the enforcement policy outlined below has the following objectives:

1. To reduce the incidents of noncompliance leading to loss of life, property, and damage to the environment.
2. To establish a uniform enforcement policy to be applied to all operations affecting OCS lands in the Gulf of Mexico.

The following paragraphs describe the various enforcement actions and provide criteria for selecting them.

ENFORCEMENT ACTION

Each inspection of a lessee's field operations and records may result in the detection of incidents of noncompliance (INC's). Specific INC's will require specific actions (see Table 1). All INC's detected during an inspection will be discussed orally with the lessee's representative and reported to the lessee in writing.

FIELD PROCEDURE

1. No INC's are detected. — No action needs to be taken.
2. INC's are detected. — If any INC's are detected, the inspection team leader will orally advise the company representative of the specific problems encountered and issue a written warning on Experimental Form OCS-4.
3. Special action required. — The specific enforcement action to be taken for each INC detected is listed in Table 1. If a shut-in of a producing zone, platform, pipeline etc., is called for, the inspection team leader will contact the District Engineer and describe the facility's condition and the implications of the shut-in. The District Engineer will authorize the shut-in action prescribed in Table 1. If the District Engineer cannot be contacted because of communication problems, the inspector will take the appropriate action indicated in Table 1 and notify the District Engineer as soon as possible.

The inspection team leader will provide the company representative with written orders to shut-in the zone(s), platform, facility, etc., on Experimental Form OCS-4 after explaining orally the reason for the shut-in. The inspector will make it clear to the company representative that the facility cannot be returned to operation until the site has been reinspected and the company has received clearance from the District Engineer to do so. If the inspector conducting the reinspection cannot contact the District Engineer because of communication problems he may authorize the resumption of operations and will notify the District Engineer as soon as possible thereafter. Any waiver of the reinspection procedure must be given by the Regional Supervisor.

OFFICE PROCEDURE

1. Warning(s) issued by inspector. — The written warning given to the company representative by the inspector must be returned to the District Engineer within 7 days and certified that all incidents of noncompliance have been corrected.
 - a. Warning form not returned within 7 days. — The District Engineer will orally notify the company, and confirm in writing, to shut in the equipment involved, if it is an operating item, the District Engineer will forward the warning notice to the Regional Supervisor with the recommendation that the company should be fined for all INC's detected and failure to comply with the warning notice.
 - b. Company requests an extension of time. — The District Engineer is authorized to grant a 7-day extension for the return of Experimental Form OCS-4 if the company requests it. The extension will be confirmed in writing and a copy will be sent to the Regional Supervisor. If the company still fails to return the Form, the District Engineer will take the action described in paragraph 1a.

2. Shut-in of facility. — As soon as the inspector reports a shut-in, the District Engineer will notify the company of the action in writing and instruct them not to resume operations until the field site has been reinspected. The confirmation of the shut-in action will also instruct the company to inform the District Engineer when they are ready for reinspection. In any event, the certification of compliance (Experimental Form OCS-4) must be returned to the District Engineer within 7 days.
 - a. Company fails to request reinspection and to certify compliance within 7 days. — District Engineer will transmit copies of Experimental Form OCS-4 and the confirmation of shut-in to the Regional Supervisor with a recommendation to fine the company for the INCs detected during inspection and for not complying with the District Engineer's orders.
 - b. Company requests reinspection within 7 days. — The District Engineer will attempt to schedule a reinspection as soon as the existing workload permits. The inspector will inspect the site, and if all INCs have been corrected and no new INCs are detected the District Engineer will authorize the company to resume operations. If the order is given orally, the District Engineer will confirm it in writing.
 - c. Company requests waiver of reinspection. — If the company feels that it cannot wait for the reinspection, they may request a waiver of the requirement from the Regional Supervisor provided that they first have returned Experimental Form OCS-4 certifying that all INCs have been corrected.
3. Shut-in of drilling wells. — If an inspector shuts-in a drilling well, the District Engineer will notify the company of the action in writing. In order to minimize the dangers of maintaining an open hole, the inspector will remain at the drilling site or return to it as soon as the INC has been corrected to reinspect and pick up the certification of compliance from the company. Orders from the District Engineer to resume operations will be passed orally with written confirmation.
4. Subsurface safety valves. — If the inspection reveals that there is no subsurface safety valve installed, and no waiver has been granted, the District Engineer will notify the Regional Supervisor, in writing, with recommendation for fine(s). The Supervisor will transmit this recommendation with his comments to Washington. Washington will recommend the fine(s) to the Justice Department.

Table 1.—Action required for OCS incidents of noncompliance action detected

[The following incidents of noncompliance have been identified as requiring specific enforcement action]

INC No.	Action	INC No.	Action	INC No.	Action	INC No.	Action
1	W/P(1)	49	Z	97	Z	145	P(2)
2	P	50	Z	98	W	146	P(2)
3	P	51	Z	99	Z	147	P(2)
4	P/Z	52	Z	100	Z	148	P(2)
5	Z	53	Z	101	Z	149	W
6	P/Z	54	Z	102	Z	150	W
7	W	55	Z	103	Z	151	P
8	W	56	Z	104	W	152	P
9	W	57	Z	105	Z	153	P
10	W	58	Z	106	Z	154	P
11	W	59	Z	107	Z	155	P
12	W	60	Z	108	Z	156	W
13	W	61	Z	109	W	157	W
14	W	62	Z	110	P(2)	158	P
15	W	63	Z	111	P(2)	159	P
16	P(2)	64	Z	112	P(2)	160	P
17	P(2)	65	W	113	P(2)	161	P
18	W	66	Z	114	P(2)	162	P(2)
19	W	67	P	115	P(2)	163	P(2)
20	Z	68	P(2)	116	P(2)	164	P(2)
21	Z	69	P(2)	117	P(2)	165	P(2)
22	W	70	P	118	P(2)	166	P(2)
23	Z	71	P	119	P(2)	167	W
24	W	72	Z	120	P(2)	168	PL(2)
25	Z	73	Z	121	P(2)	169	W
26	Z	74	Z	122	P(2)	170	W
27	Z	75	Z	123	PL	171	PL(2)
28	Z	76	Z	124	PL	172	PL(2)
29	Z	77	Z	125	PL	173	PL(2)
30	Z	78	Z	126	PL	174	W
31	Z	79	W	127	P(2)	175	R
32	Z	80	Z	128	P	176	R(3)
33	W	81	W	129	P	177	R(3)
34	Z	82	W	130	Z	178	R(3)
35	Z	83	W	131	Z	179	R(3)
36	Z	84	W	132	Z	180	R(3)
37	Z	85	W	133	Z	181	R(3)
38	Z	86	P	134	Z	182	R(3)
39	Z	87	W	135	Z	183	R(3)
40	Z	88	W	136	Z	184	R(3)
41	Z	89	W	137	W	185	R(3)
42	Z	90	W	138	W	186	W
43	Z	91	W	139	W	187	W
44	W	92	W	140	P	188	W
45	Z	93	Z	141	P(2)	189	W(4)
46	Z	94	Z	142	W	190	W
47	Z	95	Z	143	P	191	W
48	Z	96	W	144	P(2)		

ACTION CODE

W — Written Warning — Operator is notified of INC and required to make necessary changes within 7 days to comply with applicable Regulation or OCS Order.

P — platform shut-in

Z — zone (well) shut-in

R — re-enter well at Survey request

PL — pipeline shut-in

NOTES ON ENFORCEMENT ACTION

1. Warning if pollution is not present, platform shut-in if pollution exists.
2. Only that equipment on which INC's occur will be shut-in (zones, wells, pipelines, vessels, etc.)
3. If INC is detected District Engineer will require well to be re-entered, plugs drilled out and the well replugged in conformance with approved procedures and action witnessed by a Survey representative. A waiver of this requirement must be approved by the Regional Oil and Gas Supervisor.
4. If this violation is detected the District Engineer will notify the Supervisor with a recommendation for fine(s), for transmittal to Washington for action.

EXP. FORM (OCS-2)
REV. 1973

U. S. GEOLOGICAL SURVEY
CONSERVATION DIVISION
BRANCH OF OIL AND GAS OPERATIONS
OCS LEASE MANAGEMENT PROGRAM
INSPECTION REPORT
DRILLING
DISTRICT _____

LEASE NO. _____
WELL NO. _____
DATE. _____

AREA: _____ BLOCK: _____ OPERATOR: _____
DRILLING CONTRACTOR: _____ CO. REPRESENTATIVE: _____
RIG NAME: _____ WATER DEPTH: _____ TOOL PUSHER: _____
DRILLING DEPTH: _____ APPROVED DEPTH: _____ WELL STAGE: _____
DATE LAST DETAILED USGS INSPECTION: _____

TYPE FACILITY:	
Drillship	
Platform	
Platform w/Tender	
Self Elevating	
Submersible	
Semi-submersible	

TIME SUMMARY:
INSPECTION: _____ HRS.
WAITING: _____ HRS.
TRAVEL: _____ HRS.
TOTAL TIME: _____ HRS.

Ave. No. Personnel _____

Max. No. Personnel _____

RIGS SHUT-DOWN

INC. NO.	DATE & TIME SHUT-DOWN	DATE & TIME RESUMED OPERATIONS	HOURS SHUT-DOWN	REMARKS
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

APPROVED DEPARTURES

INC. NO.	DATE ISSUED	REMARKS
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

REMARKS

GENERAL HOUSEKEEPING CONDITIONS:

SIGNATURE OF INSPECTORS

Rev.

LEASE NO. _____
DATE: _____

Safety	ENF. ACT.	PINC. NO.	POTENTIAL INCIDENT OF NON-COMPLIANCE	#chk	1	Y	N	NA	CODE NO.
	W	65	Is rig or platform properly identified?	#chk	1	Y	N	NA	352
W	66	For all personnel on the rig are there sufficient: Life jackets and Life rafts? (maximum number of personnel).		#chk	1	Y	N	NA	23

Power System	NUMBER OF GENERATORS, MOTORS, LIGHTING SYSTEMS				TOTAL			
	Z	68	Are electrical generators, motors, lighting system installed, protected, maintained in accordance with National Electrical Code, API RP 500A-B?	#chk	1	Y	N	NA

Pollution Control	W/Z	1	Is facility equipped with necessary curbs, gutters and drains or drip pans?	#chk	1	Y	N	NA	39
	Z	2	Are all drains piped to a tank or sump which will maintain oil at a level to prevent discharge into the Gulf waters, or has an alternate method been approved?	#chk	1	Y	N	NA	334
	Z	4	Is operator not disposing of oil, oily solids, or drilling mud containing oil into the waters of the Gulf?	#chk	1	Y	N	NA	336
	Z	5	Is operator not disposing of drilling mud containing toxic substances into Gulf waters without neutralization?	#chk	1	Y	N	NA	50
	Z	6	Is operator not disposing of liquid waste materials containing harmful substances into Gulf waters without neutralization?	#chk	1	Y	N	NA	338
	W	7	Are solid waste materials incinerated or transported to shore? (underline method)	#chk	1	Y	N	NA	53
	W	8	Is pollution inspection made daily?	#chk	1	Y	N	NA	55
	W	14	Do operators notify each other upon observation of equipment malfunction or pollution resulting from another's operation?	#cl	c	Y	N	NA	
	W	10	Are spills and leaks recorded and records available for inspection?	#chk	1	Y	N	NA	58
	Z	16	Is sewage disposal system installed?	#chk	1	Y	N	NA	27
	W/Z	17	Does effluent contain 50 PPM or less of BOD, 150 PPM or less of suspended solids, minimum chlorine residual of 1.0 mg/liter after minimum retention time of 15 minutes?	#chk	1	Y	N	NA	29

REMARKS

Rev.

LEASE NO. _____

DATE: _____

Casing Program		Size Hole	Casing				W/ Sx. Cem.	Bond Log ?	Rem. Act. ?	Press. PSI	Test Time	WOC Time
			Size	Grade	wt/ft	w/press.	set at					
	Dr./Struc.	X		X		X		X	X	X	X	X
	Cond.											
	Sur.											
	Inter.											
	Prod.											
	Liner											

Drilling Program	APPROVED - FROM DISTRICT FILE							
		Size Hole	Size	Grade	wt/ft.	w/press.	Set at	Sx. Cement
	Dr./Struc.	X		X		X		X
	Cond.							
	Sur.							
	Inter.							
	Prod.							
	Liner							

Casing Program	ENF. ACT.	INC. NO.	POTENTIAL INCIDENT OF NON-COMPLIANCE						CODE NO.
	Z	28	Was appropriate remedial action taken, if surface casing did not cement properly?	#chk	Y	N	NA		88
	Z	31	Was liner seal pressure tested and recorded in log?	#chk	Y	N	NA		91
	Z	32	Have casing strings been pressure tested?	#chk	Y	N	NA		93
	W	33	Was test recorded in driller's log?	#chk	Y	N	NA		95
	Z	34	Was remedial action taken if needed?	#chk	Y	N	NA		96
	Z	35	Was there proper WOC time before drilling out?	#chk	Y	N	NA		97

Mud Program	Z	36	Are sufficient quantities of mud available?	#chk	Y	N	NA		98
	Z	38	Is mud properly conditioned before starting out of hole?	#chk	Y	N	NA		100
	Z	39	Is annulus filled before mud level drops 100'?	#chk	Y	N	NA		101
	Z	40	Is mechanical device used to measure mud to fill hole?	#chk	Y	N	NA		102
	Z	41	Was procedure in OCS Order 2 used if swabbing of fluid influx indicated?	#chk	Y	N	NA		103
	LAST TIME EVENT OCCURRED?			WHAT OCCURRED?					
	RECORDED IN LOG?			DEPTH?					
	Z	42	Is mud testing equipment on platform?	#chk	Y	N	NA		104
	Z	43	Are mud tests performed daily, or as warranted?	#chk	Y	N	NA		105
	FROM FIELD INFORMATION				APPROVED - FROM FILE				
	Depth	Mud Weight	Viscosity	Type/Base	Mud Weight	Viscosity	Type/Base		
	Z	44	Are mud tests recorded in log?	#chk	Y	N	NA		106
	Z	45	Is recording mud pit level indicator installed and used?	#chk	Y	N	NA		349
	Z	46	Is audio or visual warning on pit level indicator installed and used?	#chk	Y	N	NA		350
	Z	48	Is mud return indicator installed and used?	#chk	Y	N	NA		352

Rev.

LEASE NO. _____
DATE: _____BOP REQUIREMENTS

ENF. ACT.		INC. NO.	POTENTIAL INCIDENT OF NON-COMPLIANCE	#chk	1	Y	N	NA	CODE NO.
Z		195	Is hydraulically controlled bag-type BOP installed on drive pipe if conductor casing is to be eliminated?	#chk	1	Y	N	NA	
Z		49	Is hydraulically controlled bag-type BOP installed on conductor casing?	#chk	1	Y	N	NA	115
Z		50	Are diverter valves on conductor casing below BOP?	#chk	1	Y	N	NA	116
Z		52a	Are remotely controlled, hydraulically operated blowout preventers installed?	#chk		Y	N	NA	117
Z		53a							122
Z		52c	Is choke line installed?	#chk		Y	N	NA	119
Z		53c							124
Z		52d	Is kill line installed?	#chk		Y	N	NA	120
Z		53d							125
Z		52e	Is fill-up line installed?	#chk		Y	N	NA	121
Z		53e							126
Z		51	If the BOP is on the Gulf floor, are the choke and kill lines equipped to permit the diversion of hydrocarbons and other fluids?	#chk		Y	N	NA	
<div>WP OF STACK</div> <div>DATE OF LAST TEST</div> <div>TESTED TO</div>									
Z		61	Is the bag-type blow-out preventer tested with water to 70% of WP of stack or casing?	#chk	1	Y	N	NA	358
Z		62	Is the bag-type blow-out preventer actuated on drill pipe weekly?	#chk	1	Y	N	NA	147
W		64a	Is test information for all blow-out preventer tests recorded in driller's log?	#chk	1	Y	N	NA	149
Z		59a	Is BOP tested with water to WP of stack or casing when initially installed?	#chk		Y	N	NA	140
Z		59b	before drilling out on succeeding casing strings?	#chk		Y	N	NA	141
Z		59c	not less than once each week?	#chk		Y	N	NA	142
Z		59d	following repairs?	#chk		Y	N	NA	143
Z		60	Are piprams actuated each trip, at least daily?	#chk		Y	N	NA	144
Z		195	Are blind rams actuated each trip?	#chk		Y	N	NA	
Z		54	Are there accumulators or accumulators and pumps to repeatedly operate BOP?	#chk	1	Y	N	NA	127
DIFFERENT SIZE(S) OF DRILL PIPE									
Z		57	Are inside BOP assembly and drill string safety valves to fit all sizes of pipe maintained in the open position on the rig floor?	#chk		Y	N	NA	356
Z		58	Is Kelly Cock installed below swivel and full opening safety valve installed at bottom of Kelly?	#chk	2	Y	N	NA	357
<div>KELLY COCK WRENCH</div> <div>Y</div> <div>N</div> <div>WHERE LOCATED?</div>									
Z		63	Is BOP drill conducted weekly for each crew?	#chk		Y	N	NA	148
W		64b	Is drill recorded in log?	#chk		Y	N	NA	360

LEASE NO: _____
DATE: _____

TIME SUMMARY		WELL STATUS:	
INSPECTION:	HRS.	POW	PGW
WAITING:	HRS.	OSI	OSI
TRAVEL:	HRS.	OTHER (SPECIFY)	
TOTAL TIME:	HRS.	DATE LAST DETAILED USGS INSP.	
		DATE REINSPECTED:	

[illegible][illegible]

SIGNATURE OF INSPECTORS

PART I - GENERAL

ENF. ACT.	INC. NO.	POTENTIAL INCIDENT OF NON-COMPLIANCE	#chk	Y	N	NA	CODE NO.
W	129	Is structure properly identified?	#chk	Y	N	NA	406
P	140a	For all personnel on the platform are there sufficient: Life jackets: (# persons on board at time of inspect.)	#chk	Y	N	NA	24
P	140b	Life rafts? (on manned platform) (# persons on board at time of inspection) No. and size:	#chk	Y	N	NA	26
P	143	Is there an auxiliary electrical power supply?	#chk	Y	N	NA	32
NUMBER OF GENERATORS, ELECTRICAL MOTORS, LIGHTING SYSTEMS							TOTAL:
P(2)	144	Are electrical generators, motors, lighting system installed, protected, maintained in accordance with National Electrical Code, API RP 500A-B?	#chk	Y	N	NA	34
P(2)	145	Are gas engines equipped with low-tension ignition systems, rigid connections, shielded wiring?	#chk	Y	N	NA	36
W/P	1	Is platform equipped with necessary curbs, gutters and drip pans properly piped to sumps?	#chk	Y	N	NA	40
P	2	Does sump automatically maintain oil at a level to prevent discharge into the Gulf waters, or has an alternate method been approved? (# of sumps).	#chk	Y	N	NA	335
P	4	Is operator not discharging oil, oily solids or other harmful waste material into Gulf?	#chk	Y	N	NA	337
P(2)	16	Is sewage disposal system installed?	#chk	Y	N	NA	28
P(2)	17	Does effluent contain 50 PPM or less of BOD, 150 PPM or less of suspended solids, min. chlorine residual of 1.0 mg/liter after min. retention time of 15 min?	#chk	Y	N	NA	30
Is fusible material used in pneumatic lines at the following strategic locations?							
P(2)	141a	Well heads	#chk	Y	N	NA	
P(2)	141b	Prod vessels	#chk	Y	N	NA	
P(2)	141c	Pumps, engines, generators	#chk	Y	N	NA	
P(2)	141d	Other strategic locations	#chk	Y	N	NA	
Are remote shut-in controls quick opening and at the following strategic locations?							
P	129a	Helicopter deck	#chk	Y	N	NA	250
P	129b	Exit stairway	#chk	Y	N	NA	251
P	129c	On each boat landing	#chk	Y	N	NA	252
P	129d	Other strategic locations	#chk	Y	N	NA	253
P	150	Is the diagram for fire fighting and gas detection systems, and standard procedure for testing safety equipment posted in prominent place? (underline items which are NA).	#chk	Y	N	NA	266
Are fire extinguishers located in the following strategic locations?							
P	151a	Strategic Area	Size	Type	Cond.	Date Chgd.	#chk
P	151b	Well					#chk
P	151c	Production					#chk
P	151d	Compressor					#chk
P	151e	Generator					#chk
P	151f	Pump					#chk
P	151g	Living Quarters					#chk
P	151h	Other					#chk
P	153a	Firewater system of rigid pipe or chemical system in production handling area?	#chk	Y	N	NA	271
P	153b	If chemical system is used in lieu of water system, has approval been granted?	#chk	Y	N	NA	407
P	154	Is there an alternate fuel or power source to provide continued firewater system pump operation or alternate firefighting system?	#chk	Y	N	NA	272
W	155	Are firewater system pumps tested weekly and test records maintained in field?	#chk	Y	N	NA	273
P	158	Is a continuous monitoring gas detection system located in enclosed area containing gas handling facilities or equipment? (# of such areas)	#chk	Y	N	NA	278
P	160	Does gas detection system sound alarm below lower explosive limit of 1.2% and trigger shut-in sequences to operate emergency equipment when levels reach not more than 4.9% (4.9% of LEL)	#chk	Y	N	NA	290

PART II - PLATFORM PIPELINES

DEPARTING

SIZE	PRODUCT	DEP TO	REC PROD FROM FAC YES/NO	O.P. RANGE PSI HI/LO	PIPELINE PRESS SENSORS			PIPELINE PUMP	
					HI SET PSI	LO SET PSI	SHUTS WELL YES/NO	HI SET PSI	LO SET PSI

INCOMING

SIZE	PRODUCT	INCOM FROM	DEL PROD TO FAC YES/NO	O.P. RANGE PSI HI/LO	AUTO S. I. VALVE			CHECK VALVE YES/NO
					OPER-ABLE YES/NO	ACT BY PLAT AUTO SI SYS YES/NO	ACT BY IND REM SI SYS YES/NO	

BI - DIRECTIONAL

SIZE	PROD-UCT	INCOM FROM	DEP TO	DEL PROD TO FAC YES/NO	REC PROD FROM FAC YES/NO	O.P. RANGE PSI HI/LO	PRESS SENSOR				AUTO S.I. VALVE	
							HI SET PSI	LO SET PSI	SHUTS WELL YES/NO	OPER-ABLE YES/NO	ACT BY PLAT AUTO SI SYS YES/NO	ACT BY IND REM SI SYS YES/NO

ENF. ACT.	INC. NO.	POTENTIAL INCIDENT OF NON-COMPLIANCE								CODE NO.
ARE DEPARTING PIPELINES EQUIPPED WITH:										
PL	123a	Operable high and low pressure sensor? (not less than two (x) # departing lines).	#chk	Y	N	NA				298
PL	123b	High and low pressure sensors designed to S.I. wells if production received from platform?(not less than two (x) # departing lines receiving production from platform).	#chk	Y	N	NA				423
PL	127a	Are pipeline pumps equipped with operable hi-lo pressure sensors? (two (x) # of pumps).	#chk	Y	N	NA				326
ARE INCOMING PIPELINES EQUIPPED WITH:										
PL	124a	Operable automatic shut-in valve actuated by platform automatic and remote shut-in system if production delivered to platform? (# incoming lines delivering production).	#chk	Y	N	NA				400
PL	124b	Operable automatic shut-in valve actuated by platform or independent remote shut-in system if production not delivered to platform? (# incoming lines not delivering production).	#chk	Y	N	NA				408
PL	124c	Check valve? (# incoming lines).	#chk	Y	N	NA				409
ARE BI-DIRECTIONAL PIPELINES EQUIPPED WITH:										
PL	125a	Operable hi and low pressure sensors? (# bi-directional lines).	#chk	Y	N	NA				410
PL	125b	Hi and low pressure sensors designed to shut-in wells if production received from platform? (# bi-directional lines receiving production).	#chk	Y	N	NA				411
PL	125c	Operable automatic shut-in valve actuated by platform automatic and remote shut-in system if prod. delivered to platform? (# bi-directional lines delivering production).	#chk	Y	N	NA				412
PL	125d	Operable automatic shut-in valve actuated by platform or independent remote shut-in system if production not delivering to platform? (# bi-directional lines not delivering production).	#chk	Y	N	NA				413

SUBSURFACE SAFETY DEVICES

ENF. ACT.	INC. NO.	POTENTIAL INCIDENT OF NON-COMPLIANCE	#chk	Y	N	NA	CODE NO.
Z	192a	Is each tubing installation made after Dec. 1, 1972, equipped with a device activated by the platform shut-in or independent remote shut-in system if well has shut-in tubing pressure of less than 4,000 PSIG? (# such completions) (count approved subsurface controlled devices as NA).	#chk	Y	N	NA	419
Z	192b	Is each tubing installation made after Dec. 1, 1972, equipped with a subsurface controlled device (or other approved device) if well has shut-in tubing pressure of 4,000 PSIG OR GREATER? (# such completions) (count approved surface controlled devices as NA).	#chk	Y	N	NA	422
W	102	Is operation of automatic wellhead valves tested weekly and results recorded and maintained in field? (# such zones not blind-flanged or plugged?	#chk	Y	N	NA	176
W	103	Is holding pressure of automatic wellhead valves tested monthly and results recorded and maintained in field? (# such zones not blind-flanged or plugged).	#chk	Y	N	NA	177
FIELD RECORDS							
W	10	Are spills and leaks properly reported and recorded and records available for inspection?	#chk	Y	N	NA	59
W	107	Are check valves tested monthly (or quarterly if applicable) and results recorded and maintained in field? (# zones not blind-flanged or plugged?	#chk	Y	N	NA	246
W	147	Are pressure sensors for zones and all pressurized vessels tested for proper settings monthly (or quarterly if applicable) and results recorded and maintained in field? (total sensors for zones and vessels).	#chk	Y	N	NA	237
P(2)	165	If produced water is discharged into the Gulf, are 4 samples taken during 24-hour period, once a month, and analyzed?	#chk	Y	N	NA	262
P(2)	162	Is the oil content of disposed waste water reduced to an average of not more than 50 PPM with a maximum of not more than 100 PPM? Date _____, Maximum PPM _____, Average PPM _____, Location sampling station _____.	#chk	Y	N	NA	259

ATTACHMENT L

EQUIPMENT AVAILABLE FOR EMERGENCY OIL
SPILL CONTROL AND CLEAN-UP IN THE
GULF OF MEXICO

(Information taken from Clean Gulf Associates' Operations Manual)

OFFSHORE OPERATORS COMMITTEE
INVENTORY OF KNOWN RESOURCES AVAILABLE FOR
EMERGENCY OIL SPILL CONTROL & CLEANUP
MAY 1973

1. Spill Booms

A. Mississippi River Delta Area

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Amoco Production Company	3½" Figerglass	310'	Bastian Bay
Chevron Oil Company	6" Slick Bar	200'	Cal-Ky Empire, La., Terminal
	T and T	500'	Cal-Ky Empire, La., Terminal
	6" Slick Bar	300'	Main Pass Block 69 Terminal
	D. R. Smart	200'	Cal-Ky Empire, La., Terminal
	D. R. Smart	400'	Main Pass Block 69
	T and T	485'	Romere Pass
	D. R. Smart	300'	Romere Pass
	6" Slick Bar	300'	Bay Coquille, #1 Battery
	D. R. Smart	600'	Bay Coquille, #1 Battery
	D. R. Smart	100'	Southwest Pass E-2
	6" Slick Bar	500'	Southwest Pass W-1
	D. R. Smart	150'	Southwest Pass W-1
	D. R. Smart	200'	Southwest Pass E-5
	6" Slick Bar	200'	Southwest Pass W-6
	D. R. Smart	150'	Southwest Pass W-6
	6" Slick Bar	200'	West Delta Terminal
	D. R. Smart	200'	Barataria
	D. R. Smart	200'	Delta Farms
	T and T	1,060'	Venice Base
	Johns-Manville	1,300'	Venice Base
	Kain	700'	Venice Base
	D. R. Smart	1,300'	Venice Base
	Navy Type	1,000'	Romere Pass
	Portable Floating		
	Saucer Pump Skimmer	1	Pascagoula Refinery

OFFSHORE OPERATORS COMMITTEE
INVENTORY OF KNOWN RESOURCES AVAILABLE FOR
EMERGENCY OIL SPILL CONTROL & CLEANUP
MAY 1973

1. Spill Boom

A. Mississippi River Delta Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Chevron Oil Company	36" Uniroyal Boom	1,500'	Pascagoula Refinery
	36" Coastal TT Boom	500'	Pascagoula Refinery
	18" Uniroyal Boom	1,000'	Pascagoula Refinery
	Parker Systems Snare (1516)	25 boxes	Pascagoula Refinery
	Navy Type Boom Construction and Launching Assembly	1	Venice Base
	Boom Floats, Hose, Chain, Buoys, Etc.	Miscellaneous	Venice Base
Exxon Company, USA	Oil Boom	240'	Southeast Pass
	Uniroyal	200'	Potash
Gulf Oil Company - U.S.	36" Bennett (Inshore)	1000'	Venice
	D. R. Smart (Inshore)	200'	Bayou Couba Field
	D. R. Smart (Inshore)	300'	Grand Bay Field
	T. T. (Inshore)	1200'	Quarantine Bay
	Uniroyal (Inshore)	750'	West Bay Field
	Slick Bar (Inshore)	200'	Venice
	D. R. Smart (Inshore)	250'	Venice
	Slick Bar (Inshore)	400'	Ostrica Terminal
	D. R. Smart (Inshore)	180'	Ostrica Terminal

OFFSHORE OPERATORS COMMITTEE
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MAY 1973

1. Spill Boom

A. Mississippi River Delta Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Placid Oil Company	Slick Bar	300'	Port Sulphur
283 Shell Oil Company	Bennett	600'	Venice
	T-T	3200'	East Bay
	M-P	200'	Venice
	6" Slickbar	200'	Yscolskey Gas Plant
Texaco, Pipeline Texaco, Inc.		2000'	Harvey
		200'	Lafitte
		500'	
		500'	Lake Salvador
		200'	Pilot Town

B. Grand Isle-LaFourche-Terrebonne Area

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Amoco Production Company	3½" Fiberglass	480'	Lake Long Field
	3½" Fiberglass	400'	Bayou Des Allemands
	3½" Fiberglass	300'	Lake Raccourci Field
	3" Fiberglass	250'	Lake Boeuf Field

OFFSHORE OPERATORS COMMITTEE
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EMERGENCY OIL SPILL CONTROL & CLEANUP
MAY 1973

1. Spill Booms

B. Grand Isle - LaFourche - Terrebonne Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Chevron Oil Company	T and T	200'	Bayou Fourchon Terminal
	D. R. Smart	500'	Bayou Fourchon Terminal
	T And T	300'	Morgan City
	Sea Curtin	500'	Morgan City
Continental Oil Company New Orleans Division	6"	1100'	Grand Isle
Exxon Company, USA	8" Jatson	420'	Grand Isle
	8" Jatson	80'	Pelican Island
	6" Slickbar	250'	Benton Canal
Gulf Oil Company-U.S.	36" Coastal (Inshore)	600'	Timbalier Bay
	Slick Bar (Inshore)	200'	Bully Camp Field
	36" Bennett (Inshore)	1000'	Leeville
	Slick Bar (Inshore)	200'	Leeville
Mobil Oil Corporation	200' Floating Boom (6")		Clifton Ridge
	Trailer-Mounted		Tank Farm Lake Charles
Shell Oil Company	6" Slickbar	500'	Gibson Unit
		500'	Chauvin Unit
Texaco, Inc.	6"	400'	Bay deChene
	Home Made	500'	Bay St. Elaine
	Slick Bar	500'	Caillou Island

OFFSHORE OPERATORS COMMITTEE
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EMERGENCY OIL SPILL CONTROL & CLEANUP
MAY 1973

1. Spill Boom

B. Grand Isle-LaFourche-Terrebonne Are (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Texaco, Inc.	6"	200'	Cocodrie
		200'	Davant Terminal Convent
	Home Made	500'	Dog Lake
	6"	200'	Golden Meadow
	Home Made	500'	
	6"	2000'	Houma
	Home Made	500'	
	Home Made	500'	Lake Barre
		500'	Lake Pelto
	6"	200'	Leeville
	Home Made	500'	
	10" Home Made	250'	Plumb Bob

C. Morgan City-Atchafalaya Area

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Amoco Production Company	5" Float w/8" Skirt (Spill Trol)	300'	South Florence Field
Exxon Company, USA	6" Slickbar	650'	Avery Island
	6" Slickbar	200'	Weeks Island
	6" Slickbar	400'	Duck Lake
	Styrofoam	250'	Avery Island
	18" Uniroyal	350'	Bayou Sale
	35" Uniroyal	2000'	Baton Rouge Refinery
Kerr-McGee Corporation	TT 4'	1000'	Morgan City

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OFFSHORE OPERATORS COMMITTEE
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MAY 1973

1. Spill Booms

C. Morgan City-Atchafalaya Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Mobil Oil Corporation	(2) 40' boom for boat 6" x 18" apron	1036'	Morgan City
Phillips Petroleum Company	12" Sea-Curtain Boom	600'	Morgan City
Shell Oil Company	6" Slickbar	500'	Morgan City
		300'	Weeks Island
		1700'	Weeks Lake Verret Unit
		750'	Bayou Sorrel Unit
Tenneco	6"	300'	Cocodrie
Texaco Pipeline	6"	200'	Avery Island
	6"	300'	Baton Rouge
Texaco, Inc.	10" Home Made	200'	Berwick
		200'	Fausse Point
		50'	Houseshoe Bayou
		200'	Lake Mongonlois
	6"	(2) 300'	Morgan City
Texaco Pipeline	6"	2,000'	New Iberia
Texaco, Inc.	10" Home Made	100'	West Cote Blanche Bay
		500'	West Cote Blanche Bay
	3' Plastic, Nylon, Rubber	520'	West Cote Blanche Bay

OFFSHORE OPERATORS COMMITTEE
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EMERGENCY OIL SPILL CONTROL & CLEANUP
MAY 1973

1. Spill Booms

C. Morgan City-Atchafalaya Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Union Oil Co. of Calif.	6"	320'	East Lake Palourde

D. Vermilion-Cameron Area

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Amoco Production Company	6" x 10"	200'	Grand Chenier
	6" x 10"	1000'	Hackberry
Exxon Company, USA	6" Slickbar	250'	Pecan Island
Cities Service Oil Company	6"	2000'	Lake Charles
	12"	150' (3-50' sections)	Lawson Field-Crowley
Continental Oil Company	18" Uniroyal	360'	Gibbstown Barge Terminal
Shell Oil Company	6" Slickbar	650'	Black Bayou Unit

OFFSHORE OPERATORS COMMITTEE
INVENTORY OF KNOWN RESOURCES AVAILABLE FOR
EMERGENCY OIL SPILL CONTROL & CLEANUP
MAY 1973

1. Spill Booms

D. Vermilion-Atchafalaya Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Texaco, Inc.	10" Home Made	150'	East Hackberry

E. Texas Coast Area

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
American Oil Company	6"	2450'	Texas City
Atlantic-Richfield	6"	200'	Aransas Pass
Atlantic Pipeline	6"	100'	Longview
Chevron Oil Company	T-and T	200'	Sabine Terminal
	D. R. Smart	500'	Sabine Terminal
	T and T	500'	Padre Island (Rockport,
	D. R. Smart	500'	Cedar Point (Gal. Bay)
Exxon Company, USA	18" Uniroyal	1500'	Baytown Refinery
	36" Uniroyal	1200'	Baytown Refinery
Gulf Oil Company- U.S.	18" Uniroyal (Inshore)	320'	Goose Creek

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1. Spill Booms

E. Texas Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Length</u>	<u>Location</u>
Shell Oil Company	None		
Sun Oil Company	18" Uniroyal	700'	Sour Lake
	18" Uniroyal	1000'	Nederland
	6" Slick Bar	400'	Nederland
	36" Bennett	2000'	Beaumont (In Stock)
	18" Bennett	2000'	Beaumont (In Stock)
	6" Slick Bar	3000'	Houston
Texaco, Inc.	6"	(2) 100'	Orange
		500'	Galena Park
		500'	Port Arthur
		500'	Port Neches
Texaco Pipeline		200'	Houston

2. Skimmers & Vacuum Equipment

A. Mississippi River Delta Area

<u>Operator</u>	<u>Skimmers</u>	<u>Type</u>	<u>Location</u>
Amoco Production Company		36" x 44" Floating Skimmer	Lake Long Field
Chevron Oil Company	1	36" Floating	Barataria

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2. Skimmers & Vacuum Equipment

A. Mississippi River Delta Area (Cont'd)

<u>Operator</u>	<u>Skimmers</u>	<u>Type</u>	<u>Location</u>
Chevron Oil Company	**3	Shell	Venice Base
	1	Barge Mounting	Venice Base
	1	36" Floating	Romere Pass
	*11	AK	Venice Base
	2	35 BBL Capacity Vacuum Trucks Complete w/Skimmers	Pascagoula Refinery
Exxon Company, USA		2" Saucer Skimmer Pump	Southeast Pass
	(2)	3 1/2" Saucer Skimmer Pump	Harvey
		2" Saucer Skimmer Pump	Lake Washington
		3 1/2" Saucer Skimmer Pump	Potash
Gulf Oil Company-U.S.		Acme (Saucer) Skimmer	Bayou Couba Field
		Water Master Skimmer	Grand Bay Field
		Swiss-type Skimmer	Quarantine Bay
		Self-propelled Skimmer Barge	Quarantine Bay
		Water Master Skimmer	West Bay Field
		Water Master Skimmer	Venice
		Acme (Saucer) Skimmer	Venice
	Acme (Saucer) Skimmer	Ostrica Terminal	
Phillips Petroleum Company		Float Skimmer Model 3SK-FS	Buras
		Capacity 200 GPM	

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2. Skimmers & Vacuum Equipment

A. Mississippi River Delta Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Location</u>
Shell Oil Company	(1) Shell Oil Scoop	Venice
	(1) 24" Swiss Olea 111 Skimmer	Venice
	Skimmer Pump 700 GPM	East Bay
	Portable Cent Sump Pump (100 PSIG Air) 300 GPM	Yscloskey Plant
Texaco, Inc.	Floating Skimmer (3HP)	Garden Island Bay
	(2) Floating Skimmer (3HP)	Lafitte
	suction unit (3HP)	Pilot Town

B. Grand Isle-LaFourche-Terrebonne Area

<u>Operator</u>	<u>Type</u>	<u>Location</u>
Chevron Oil Company	Don Wilson AK	Bay Marchand Bayou Fourchone Te: minal
Continental Oil Company New Orleans Division	Skid-Deutz Vacuum Pump (15HP) Diesel-Diaphragm Pump (5HP)	Grand Isle

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2. Skimmers & Vacuum Equipment

B. Grand Isle-LaFourche-Terrebonne (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Location</u>
Exxon Company, USA	3½" Saucer Skimmer Pump	Thibodaux
	Acme 400 Sk.	Grand Isle
	Acme 400 Sk.	Polican Isle
Gulf Oil Company-U.S.	Parker Oil Hawg	Timbalier Bay
	Acme Tunnel Skimmer	Bully Camp Field
	Acme (Saucer) Skimmer	Leeville
Shell Oil Company	(2) Acme FS-3	Chauving & Gibsor
	Portable 3 x 3 Cent Pump (5 HP Gas)	Lapice
	Portable 3 x 3 Cent Pump (5 HP Gas)	St. Gabriel
Texaco, Inc.	Float Skimmer (3 HP)	Bay deChene
	Float Skimmer (3 HP)	Bay St. Elaine
	Cent. Pump (9 HP) 200 GPM	
	Cent. Pump (9 HP) 200 GPM	Caillou Island
	Suction Unit (3 HP)	Cocodrie
	Cent. Pump (2 HP) 60 GPM	
	Section Unit 3 HP	
	Cent. Pump (9 HP) 200 GPM	Davant Terminal
	Cent. Pump (2 HP) 60 GPM	Dog Lake
	(4) Suction Units (3 HP)	
	(2) Float Skimmer (3 HP)	
	Cent. Pump (2 HP) 60 GPM	
	Float Skimmer (1 ½ HP)	Houma

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2. Skimmers & Vacuum Equipment

C. Morgan City - Atchafalaya Area

Operator

Type

Location

Chevron Oil Company

2 AK

Morgan City

Exxon Company, USA

Skimmer Pump w/26" Float

Bayou Sale

Skimmer Pump (Floating)

Morgan City

Skimmer Pump w/26" Float

Avery Island

Skimmer Pump w/26" Float

Duck Lake

Shell Oil Company

(2) Portable Vacuum Pump (3 HP Gas)

Bayou Sorrel Uni

Float Skimmer Model 3SK-FS

Weeks Island Uni

Float Skimmer (3 HP)

West Lake Verret

Portable Center Pump

Texaco, Inc.

Suction Unit (3 HP)

Lafayette

Float Skimmer suction unit (3 HP)

New Iberia

Suction Unit (3 HP)

West Cote Blanch

Float Skimmer (3 HP)

Float Skimmer (1 1/2 HP)

Union Oil Co. of California

(2) Float Skimmer (2 HP air) 120 GPM

East Lake Palour

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2. Skimmers & Vacuum Equipment

D. Vermilion-Cameron Area

<u>Operator</u>	<u>Type</u>	<u>Location</u>
Amoco Production Company	Acme Skimmer Pump w/4 HP Engine	Hackberry
Cities Service Oil Company	Floating Skimmer Pump Model FS400-ASK 4" Float Complete w/Gasoline engine 100' of 4" Acme Nylon Hose w/couplings, elbows & floats	Lawson Field-Crowley
Phillips Petroleum Company	Float Skimmer Model 3SK-FS 200 GPM	Abbeville
Shell Oil Company	(2) Float Skimmer Model 3SK-FS Portable Vacuum Pump (3 HP)	Black Bayou Unit

E. Texas Gulf Coast Area

<u>Operator</u>	<u>Type</u>	<u>Location</u>
Chevron Oil Company	2 AK 1 Floating 1 Floating	Padre Island (Rockport, Padre Island (Rockport, Cedar Poing

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2. Skimmers & Vacuum Pumps

E. Texas Gulf Coast Area (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Location</u>
Exxon Company, USA	6 Skimmer Pumps-Air Driven	Baytown Refinery
Texaco, Inc.	(1) 4 HP Floating skimmer	Orange, Texas

3. Spraying Equipment

<u>Operator</u>	<u>Type</u>	<u>Capacity</u>	<u>Location</u>
Chevron Oil Company	1 Self-Elevating Boat (60' water depth) equipped with 700 GPM fire pumps and spray nozzle mounted on 46' crane boom.		Bay Marchand
	7 65'-85' Utility Vessels equipped with fire pumps and deck-mounted spray nozzles.		Bay Marchand
Exxon Company, USA	Trailer Mounted-Self Contained	150 Gal.	Bayou Sale
	2 Hale Pumps w/proportioning device	200 GPM	Grand Isle
	5" x 6" B. J. Pump		Breton Canal
	3" Trailer Mounted Pump		Morgan City

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3. Spraying Equipment (Cont'd)

<u>Operator</u>	<u>Type</u>	<u>Capacity</u>	<u>Location</u>
Mobil Oil Corporation	(5) Portable Hi Press Pumps & Guns "Huss" Helicopter Spray Unit	84 Gal.	Morgan City
Shell Oil Company	John Bean Spray Pump Husdon 32-B-1 Sprayer	150 Gal. 50 Gal.	Black Bayou Unit Good Hope Unit

4. Absorbents

<u>Type</u>	<u>Quantity</u>	<u>Location</u>	<u>Owner</u>
Hay	25 bales 50 bales 25 bales 20 bales	Lake Long Field Lake Raccourci Field Grand Chenier Hackberry	Amoco Production
Fibre Perl Sorbent	75 bags	Lawson Field-Crowley, La.	Cities Service Oil

In addition to the equipment of the Offshore Operators Committee, the Clean Gulf Associates also lease the following equipment from Halliburton Services:

- A. Fast Response Open Sea and Bay Skimmer System. Location:
1 @ Venice; 1 @ Intracoastal City.
- B. High Volume Open Sea Skimmer System. Location: Hoss barge,
Halliburton dock, Grand Isle.
- C. Shallow Water Skimmer System. Location. 1 @ Grand Isle.
Selection of a new model to be located at Venice is underway.
- D. Auxiliary Shallow Water Skimmers and Booms. Location:
Grand Isle (2 Parker oil Hawg skimmers; Bennet Flexiflo
Boom/100' section with skid). Venice (2 Swiss Olea III type
skimmers, Bennet Flexiflow Boom/100' section with skid).
Intracoastal City (1 Parker oil Hawg and 1 Swiss Olea III).
- E. Helicopter Underslung Spray System (HUSS). Location: Grand
Isle (one complete system); Venice (one complete system).
- F. Water Fowl Rehabilitation Units and Bird Scarers. Location:
Grand Isle (24 automatic scare away propane guns; 1 water
fowl rehabilitation unit). Venice (same as Grand Isle).
- G. Polyurethane Foam Generators and Pads. Location. Venice;
Grand Isle; Intracoastal City.

ATTACHMENT M

SAMPLE OCS LEASE FORM

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OIL AND GAS LEASE OF SUBMERGED LANDS
UNDER THE OUTER CONTINENTAL SHELF LANDS ACT

Office

Serial Number

Cash Bonus

Rental Rate

Minimum Royalty Rate

Royalty Rate

This lease is made and effective as of _____ (hereinafter called the Effective Date)
by and between the United States of America (hereinafter called the Lessor), by the
Bureau of Land Management, its authorized officer, and

(hereinafter called the Lessee). In consideration of the cash payment heretofore made by the Lessee to the Lessor and in consideration of the promises, terms, conditions and covenants contained herein, the parties hereto agree as follows:
Sec. 1. Statutes and Regulations. This lease is made pursuant to the Outer Continental Shelf Lands Act of August 7, 1953 (67 Stat. 462; 43 U.S.C. Secs. 1331, *et seq.*) (hereinafter called the Act). This lease is subject to all the provisions of the Act and to all the terms, conditions and requirements of the valid regulations promulgated by the Secretary of the Interior (hereinafter called the Secretary) thereunder in existence upon the effective date of this lease, all of which are incorporated herein and, by reference, made a part hereof. This lease shall also be subject to regulations hereafter issued by the Secretary pursuant to his authority under section 5(a)(1) of the Act to prescribe and amend at any time such rules and regulations as he may determine to be necessary and proper in order to provide for the prevention of waste and for the conservation of the natural resources of the Outer Continental Shelf, and for the protection of correlative rights therein, which regulations shall be deemed incorporated herein and, by reference, made a part hereof when promulgated.

Sec. 2. Rights of Lessee. The Lessor hereby grants and leases to the Lessee the exclusive right and privilege to drill for, mine, extract, remove and dispose of oil and gas deposits, except helium gas, in or under the following-described area of the Outer Continental Shelf of the United States:

containing approximately

_____ acres (hereinafter referred to as the leased area), together with:

(a) the nonexclusive right to conduct within the leased area geological and geophysical explorations in accordance with applicable regulations;

(b) the nonexclusive right to drill water wells within the leased area and to use water produced therefrom for operations pursuant to the Act free of cost, provided that such drilling is conducted in accordance with procedures approved by the Regional Oil and Gas Supervisor of the Geological Survey (hereinafter called the "Supervisor"); and

(c) the right to construct or erect and to maintain within the leased area all artificial islands, platforms, fixed or floating structures, sea walls, decks, dredged channels and spaces, buildings, plants, telegraph or telephone lines and cables, pipelines, reservoirs, tanks, pumping stations, and other works and structures necessary to the full enjoyment of the rights granted by this lease, subject to compliance with applicable laws and regulations.

Sec. 3. Obligations of Lessee. The Lessee agrees:

(a) *Rentals and royalties.* (1) To pay rentals and

royalties as follows:

Rentals. With respect to each lease year commencing prior to a discovery of oil or gas on the leased area, to pay the Lessor on or before the first day of each such year, a rental of _____ per acre or fraction thereof.

Minimum royalty. To pay the Lessor at the expiration of each lease year commencing after discovery a minimum royalty of _____ per acre or fraction thereof or, if there is production, the difference between the actual royalty required to be paid with respect to such lease year and the prescribed minimum royalty, if the actual royalty paid is less than the minimum royalty.

Royalty on production. To pay the Lessor a royalty of _____ percent in amount or value of production saved, removed, or sold from the leased area. Gas of all kinds (except helium and gas used for purposes of production from and operations upon the leased area or unavoidably lost) is subject to royalty.

(2) It is expressly agreed that the Secretary may establish minimum values for purposes of computing

royalty on products obtained from this lease, due consideration being given to the highest price paid for a part or for a majority of production of like quality in the same field, or area, to the price received by the Lessee, to posted prices, and to other relevant matters. Each such determination shall be made only after due notice to the Lessee and a reasonable opportunity has been afforded the Lessee to be heard.

(3) When paid in value, royalties on production shall be due and payable monthly on the last day of the month next following the month in which the production is obtained. When paid in production, such royalties shall be delivered at pipeline connections or in tanks provided by the Lessee. Such deliveries shall be made at reasonable times and intervals and, at the Lessor's option, shall be effected either (i) on or immediately adjacent to the leased area, without cost to the Lessor, or (ii) at a more convenient point closer to shore or on shore, in which event the Lessee shall be entitled to reimbursement for the reasonable cost of transporting the royalty substance to such delivery point. The Lessee shall not be required to provide storage for royalty taken in kind in excess of tankage required when royalty is paid in value. When payments are made in production the Lessee shall not be held liable for the loss or destruction of royalty oil or other liquid products in storage from causes over which the Lessee has no control.

(b) *Bonds*. To maintain at all times the bond required prior to the issuance of this lease and to furnish such additional security as may be required by the Lessor if, after operations or production have begun, the Lessor deems such additional security to be necessary.

(c) *Wells*. (1) To diligently drill and produce such wells as are necessary to protect the Lessor from loss by reason of production on other properties or, in lieu thereof, with the consent of the Supervisor, to pay a sum determined by the Supervisor as adequate to compensate the Lessor for failure to drill and produce any such well. In the event that this lease is not being maintained in force by other production of oil or gas in paying quantities or by other approved drilling or reworking operations, such payments shall be considered as the equivalent of production in paying quantities for all purposes of this lease.

(2) After due notice in writing, to diligently drill and produce such other wells as the Secretary may reasonably require in order that the leased area or any part thereof may be properly and timely developed and produced in accordance with good operating practice.

(3) At the election of the Lessee, to drill and produce other wells in conformity with any system of well spacing or production allotments affecting the area, field, or pool in which the leased area or any part thereof is situated, which is authorized or sanctioned by applicable law or by the Secretary.

(d) *Payments*. To make all payments to the Lessor by check, bank draft or money order payable as indicated herein unless otherwise provided by regulations or by direction of the Secretary. Rental, royalties, and other payments shall be made payable to the United States Geological Survey and tendered to the Supervisor, except that filing charges, bonuses, and first year's rental shall be made payable to the Bureau of Land Management and remitted to the Manager of the appropriate field office of that Bureau.

(e) *Inspection*. To keep open at all reasonable times for the inspection of any duly authorized representative of the Lessor, the leased area and all wells, improvements, machinery and fixtures thereon and all books, accounts, and records relative to operations and surveys or investigations on or with regard to the leased area or under the lease.

(f) *Conduct of operations*. To conduct all operations under this lease in accordance with applicable law and regulations.

(g) *Indemnification*. To indemnify and save the Lessor harmless against and from any and all claims of any nature whatever, including without limitation claims for loss or damage to property or injury to persons, caused by, or resulting from, any operation on the leased area conducted by or on behalf of the Lessee; provided that the Lessee shall not be held responsible to the Lessor under this subsection for any loss, damage, or injury caused by, or resulting from: (1) any negligent action of the Lessor other than the exercise or performance of (or the failure to exercise or perform) a discretionary function or duty on the part of a Federal agency or an employee of such an agency, whether or not the discretion involved is abused; or (2) the Lessee's compliance with an order or directive of the Lessor against which an appeal by the Lessee under 30 CFR 250.81 is filed before the cause of action for such a claim arises and is pursued diligently thereafter.

(h) *Equal Opportunity Clause*. The Lessee agrees that, during the performance of this lease:

(1) The Lessee will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Lessee will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Lessee agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Lessor setting forth the provisions of this Equal Opportunity clause.

(2) The Lessee will, in all solicitations or advertisements for employees placed by or on behalf of the Lessee, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(3) The Lessee will send to each labor union or representative of workers with which Lessee has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Lessor, advising the labor union or workers' representative of the Lessee's commitments under this Equal Opportunity clause, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Lessee will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The Lessee will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, as amended, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Secretary of the Interior and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the Lessee's noncompliance with the Equal Opportunity clause of this lease or with any of said rules, regulations, or orders, this lease may be canceled, terminated or suspended in whole or in part and the Lessee may be declared ineligible for further Federal government contracts or leases in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, as amended, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, as amended, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The Lessee will include the provisions of Paragraphs (1) through (7) of this subsection (h) in

every contract, subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, as amended, so that such provisions will be binding upon each contractor, subcontractor or vendor. The Lessee will take such action with respect to any contract, subcontract or purchase order as the Secretary may direct as a means of enforcing such provisions including sanctions for noncompliance; *provided, however*, that in the event the Lessee becomes involved in, or is threatened with, litigation with a contractor, subcontractor or vendor as a result of such direction by the Secretary, the Lessee may request the Lessor to enter into such litigation to protect the interests of the Lessor.

(i) *Certification of nonsegregated facilities.* By entering into this lease, the Lessee certifies that Lessee does not and will not maintain or provide for Lessee's employees any segregated facilities at any of Lessee's establishments, and that Lessee does not and will not permit Lessee's employees to perform their services at any location, under Lessee's control, where segregated facilities are maintained. The Lessee agrees that a breach of this certification is a violation of the Equal Opportunity clause in this lease. As used in this certification, the term "segregated facilities" means, but is not limited to, any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. Lessee further agrees that (except where Lessee has obtained identical certifications from proposed contractors and subcontractors for specific time periods) Lessee will obtain identical certifications from proposed contractors and subcontractors prior to the award of contracts or subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that Lessee will retain such certifications in Lessee's files; and that Lessee will forward the following notice to such proposed contractors and subcontractors (except where the proposed contractor or subcontractor has submitted identical certifications for specific time periods). Notice to prospective contractors and subcontractors of requirement for certification of nonsegregated facilities. A Certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32 F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a contract or subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each contract and subcontract or for all contracts and subcontracts during a period (i.e., quarterly, semiannually, or annually).

(j) *Assignment of lease.* To file for approval with the appropriate office of the Bureau of Land Management any instrument of transfer of this lease, or any interest therein, required to be filed under applicable regulations, within the time and in the manner prescribed by the applicable regulations.

Sec. 4. Term. This lease shall continue for a period of 5 years from the effective date of this lease and so long thereafter as oil or gas may be produced from the leased area in paying quantities, or drilling or well reworking operations, as approved by the Secretary, are conducted thereon.

Sec. 5. Cooperative or Unit Plan. Lessee agrees that, within 30 days after demand by Lessor, Lessee will subscribe to and operate under such cooperative or unit plan for the development and operation of the area, field,

or pool, or part thereof, embracing lands subject to this lease as the Secretary may determine to be practicable and necessary or advisable in the interest of conservation. Where any provision of a cooperative or unit plan of development which has been approved by the Secretary, and which by its terms affects the leased area or any part thereof, is inconsistent with a provision of this lease, the provision of such cooperative or unit plan shall govern.

Sec. 6. Reservations to Lessor. All rights in the leased area not expressly granted to the Lessee by the Act, the regulations, or this lease are hereby reserved to the Lessor. Without limiting the generality of the foregoing, such reserved rights include:

(a) *Geological and geophysical exploration; rights-of-way.* The right to authorize the conduct of geological and geophysical exploration in the leased area which does not interfere with or endanger actual operations under this lease, and the right to grant such easements or rights-of-way upon, through, or in the leased area as may be necessary or appropriate to the working of other lands or to the treatment and shipment of products thereof by or under authority of the United States, its Lessees or Permittees.

(b) *Leases of sulfur and other minerals.* The right to grant leases of any mineral other than oil and gas within the leased area or any part thereof. No lease of other mineral shall authorize or permit the Lessee thereunder unreasonably to interfere with or endanger operations under this lease.

(c) *Purchase of production.* In time of war, or when the President of the United States shall so prescribe, the right of first refusal to purchase at the market price all or any portion of the oil or gas produced from the leased area, as provided in Section 12(b) of the Act.

(d) *Taking of royalties.* The right to determine whether royalty will be taken in the amount or the value of production.

(e) *Helium.* Pursuant to Section 12(f) of the Act, the ownership of and the right to extract helium from all gas produced under this lease.

(f) *Suspension of operations during war or national emergency.* Upon recommendation of the Secretary of Defense, during a state of war or national emergency declared by the Congress or President of the United States after August 7, 1953, the authority of the Secretary to suspend any or all operations under this lease, as provided in Section 12(c) of the Act. *Provided*, That just compensation shall be paid by the Lessor to the Lessee.

(g) *Restriction of exploration and operations.* The right, as provided in Section 12(d) of the Act, to restrict from exploration and operations the leased area or any part thereof which may be designated by and through the Secretary of Defense, with the approval of the President, as, or as part of, an area of the Outer Continental Shelf needed for national defense; and so long as such designation remains in effect no exploration or operations may be conducted on the surface of the leased area or the part thereof included within the designation except with the concurrence of the Secretary of Defense; and if operations or production under this lease within any such restricted area shall be suspended, any payments of rentals and royalty prescribed by this lease likewise shall be suspended during such period of suspension of operations and production, and the term of this lease shall be extended by adding thereto any such suspension period, and the Lessor shall be liable to the Lessee for such compensation as is required to be paid under the Constitution of the United States.

Sec. 7. Directional Drilling. A directional well drilled under the leased area from a surface location on nearby land not covered by this lease shall be deemed to have the same effect for all purposes of this lease as a well drilled from a surface location on the leased area. In such circumstances, drilling shall be considered to have

been commenced on the leased area when drilling is commenced on the nearby land for the purpose of directionally drilling under the leased area, and production of oil or gas from the leased area through any directional well surfaced on nearby land or drilling or reworking of any such directional well shall be considered production or drilling or reworking operations (as the case may be) on the leased area for all purposes of this lease. Nothing contained in this paragraph is intended or shall be construed as granting to the Lessee any leasehold interests, licenses, easements, or other rights in or with respect to any such nearby land in addition to any such leasehold interests, licenses, easements, or other rights which the Lessee may have lawfully acquired under the Act or from the Lessor or others.

Sec. 8. Surrender of Lease. The Lessee may surrender this entire lease or any officially designated subdivision of the leased area by filing with the appropriate office of the Bureau of Land Management a written relinquishment, in triplicate, which shall be effective as of the date of filing. No surrender of this lease or of any portion of the leased area shall relieve the Lessee or his surety of the obligation to make payment of all accrued rentals and royalties or to abandon all wells on the area to be surrendered in a manner satisfactory to the Supervisor.

Sec. 9. Removal of property on termination of lease. Upon the termination of this lease in whole or in part, or the surrender of the lease in whole or in part, as herein provided, the Lessee shall within a period of 1 year thereafter remove from the premises no longer subject to the lease all structures, machinery, equipment, tools, and materials in accordance with applicable regulations and orders of the Supervisor; *provided, however,* that the Lessee may continue to maintain any such property on the leased area for whatever longer period it may be needed, as determined by the Supervisor, for producing wells or for drilling or producing on other leases.

Sec. 10. Remedies in case of default. (a) Whenever the Lessee fails to comply with any of the provisions of the Act, or of this lease, or of the regulations issued under the Act and in force and effect on the effective date of this lease, the lease shall be subject to can-

cellation in accordance with the provisions of Section 5(b) of the Act, *provided, however,* that the 30-day notice provision applicable to non-producing leases under Section 5(b)(1) of the Act shall also apply as a prerequisite to the institution of any legal action by the Lessor to cancel this lease while it is in a producing status. Nothing in this subsection shall be construed to apply to, or require any notice with respect to, any legal action instituted by the Lessor other than an action to cancel the lease pursuant to Section 5(b) of the Act.

(b) Whenever the Lessee fails to comply with any of the provisions of the Act, or of this lease, or of any regulations promulgated by the Secretary under the Act, the Lessor may exercise any legal or equitable remedy or remedies which the Lessor may have, including appropriate action under the penalty provisions of Section 5(a)(2) of the Act; *however,* the remedy of cancellation of the lease may be exercised only under the provisions of Section 5(b) and Section 8(i) of the Act.

(c) A waiver of any particular violation of the provisions of the Act, or of this lease, or of any regulations promulgated by the Secretary under the Act, shall not prevent the cancellation of this lease or the exercise of any other remedy or remedies under paragraphs (a) and (b) of this section by reason of any other such violation or for the same violation occurring at any other time.

Sec. 11. Heirs and successors in interest. Each obligation hereunder shall extend to and be binding upon, and every benefit hereof shall inure to, the heirs, executors, administrators, successors, or assigns, of the respective parties hereto.

Sec. 12. Unlawful interest. No member of, or Delegate to, Congress, or Resident Commissioner, after his election or appointment, or either before or after he has qualified, and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, except as provided in 43 CFR 7.4(a)(1), shall be admitted to any share or part in this lease or derive any benefit that may arise therefrom; and the provisions of Section 3741 of the Revised Statutes (41 U.S.C. Sec. 22), as amended, and Sections 431, 432, and 433 of Title 18 of the United States Code, relating to contracts made or entered into, or accepted by or on behalf of the United States, form a part of this lease so far as the same may be applicable.

THE UNITED STATES OF AMERICA

(Signature of Lessee)

By _____
(Authorized Officer)

(Signature of Lessee)

(Title)

(Signature of Lessee)

(Date)

(Signature of Lessee)

If this lease is executed by a corporation, it must bear the corporate seal

Persons who submitted oral and/or written testimony
for the Public Hearing Record

1. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

2. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

3. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

4. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

5. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

6. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

7. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

ATTACHMENT N

LIST OF PERSONS WHO SUBMITTED ORAL AND/OR WRITTEN TESTIMONY FOR PUBLIC HEARING RECORD

8. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

9. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

10. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

11. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

12. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

13. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

14. Dr. Robert V. D. Arneson, Executive Director, National
Association of Manufacturers, Washington, D.C.

Persons Who Submitted Oral and/or Written Testimony
for the Public Hearing Record

<u>Name</u>	<u>Agency, Organization, or Individual</u>
1. Reubin O. D. Askew	Governor of Florida
2. Rick Farrell	Representative of Senator Lawton Chiles
3. Dr. Robert Vernon	Director, Dept. Natural Resources State of Florida
4. Mrs. Roberts	Representing State Rep. Richard Price
5. Vincent Sloper, Jr.	Geologist, Mem. House of Representatives State of Mississippi
6. Mr. Nichols	Representing T. Terrell Sessums Speaker Florida House Representative
7. Jim Buck Ross	Commissioner, Dept. Agriculture, Commerce State of Mississippi
8. P. E. Bangston	Representing Governor William L. Waller, State of Mississippi
9. Jerry Oxner	Representing Attorney General, State of Florida
10. Richard F. Hill	Advisor on Environmental Quality, Federal Power Commission
11. Andrew A. Martin	Chairman, Louisiana State Mineral Board
12. Bill Bevis	Chairman, Florida Public Service, Commission, Tallahassee
13. Edward H. Gerstenfield	Attorney, Representing United District Companies
14. Leslie B. Lampton	Chairman, Governor's Energy Fuel Advisory Committee, Jackson, Mississippi
15. Mr. DeVille for Clint Pray	Chairman, Governor's Council on Environ- mental Quality, State of Louisiana
16. Charles H. Williams for J. C. Redd	President, Mississippi Economic Council Mississippi State Chamber of Commerce
17. Michael B. Veal	Choctawhatchee League for Environmental Awareness Now (CLEAN), Okaloosa County, Florida
18. Bruce Johnson and Dr. James I. Jones	Director, Florida Coastal Coordinating Council
19. Floyd B. Bowen	Concerned Citizen, Lakeland, Florida
20. Robin Lewis	Spokesman for Hillsborough County Environmental Coalition, Tampa, Florida
21. Julien Bennett	Vice President, Bay County Chamber of Commerce, Panama City, Florida

<u>Name</u>	<u>Agency, Organization, or Individual</u>
22. Kenneth H. Mackay, Jr.	Co-Chairman, Florida Energy Study Commission, Ocala
23. Jim Kenny - Read Carlos Stone's State- ment	Executive Director, Florida Road Builders' Association
24. Gene T. Turnipseed/ Charles Lowery	Bream Fisherman Association, Inc.
25. Joe T. LaBoon	Vice President, Operation, Atlantic Gas Light Company, Georgia
26. Anne Rudloe	American Littoral Society
27. Louis E. Stone	Manager of Electric Operations, Orlando Utilities Commission
28. Tim S. Stuart, Ph.D.	Environmental Support Services, Dept. of Pollution Control, State of Florida
29. J. E. Coventon	Assistant to Vice President - Gas Supply Transcontinental Gas Pipe Line Corp.
30. T. N. Anderson	Chairman, Florida Conservation Council
31. Jerry W. Gerde	Spokesman for Environmental Council of Bay County, Inc. and Panama City Jaycees
32. Charles M. Davis	Senior Vice President and Chairman of the Executive Commission, Greater Tampa Chamber of Commerce
33. W. E. Matthews, IV	Vice President, Southern Natural Resources, Inc., Southern Natural Gas Company
34. C. H. Adams	General Manager, Southern E & P Region Cities Service Oil Company
35. Dr. B. D. Owen	President, University of Tampa
36. William H. Moore	Director and State Geologist, Mississippi Geological Survey
37. J. R. Peterson	Associate Director, Mississippi Research and Development Center, Jackson, Miss.
38. Joe W. Tyson	Project Coordinator, Gulf Universities Research Consortium
39. Kenneth R. Joynt	Vice President, Southern E & P Region, Mobile Oil Corporation
40. Charles A. Rosenthal	Schlumberger Well Services
41. James W. Dunlop	Brooklyn Union Gas Company
42. H. H. Williams	Public Affairs Representative, Florida Power Corporation
43. Ray O'Brien	Vice President, Southern E & P Region Shell Oil Company
44. C. Horton Smith	Vice President, Oil Mop. Inc.

<u>Name</u>	<u>Agency, Organization, or Individual</u>
45. C. H. Corn	Representing City Manager, Tallahassee
46. Robert P. Jones	Executive Director, Southeastern Fisheries Association, Inc.
47. David O. Hamrick	Vice President, Tropicana Products, Inc.
48. John C. Gore	Washington Representative, British Petroleum Alaska Explor., Inc.
49. A. J. Willis	Manager, Southern E & P District, Phillips Petroleum Company
50. Jon Bennett	Jackson County, Mississippi Planning Commission
51. Cecil Dubuisson	Vice President, Long Beach, Mississippi Chamber of Commerce
52. Esther Barrett (Mrs.)	President, Old Spanish Trail Heritage Foundation, Mississippi
53. Jolly McCarty of Jackson County	Mississippi Jaycees
54. Ava Avent (Mrs.)	Executive Director, Pascagoula - Moss Pt. Area Chamber of Commerce - Mississippi
55. Wayne Weidie	Editor/Publisher, Ocean Spring Record, Mississippi
56. Roger Carlton	Assistant to County Administrator, Pinellas County, Florida
57. Ray Butterfield	General Manager, WLOX-TV, Radio, Biloxi, Mississippi
58. Edward S. Hoyt	County Administrator, Sarasota, Florida
59. Mike Kenton	City of Clearwater, Florida, Environmental Specialist
60. Thomas Stennis	Mayor Ocean Spring, Mississippi
61. Frank C. Walther	Mayor, City of Venice, Florida
62. Ray T. Sutton	Commissioner of Conservation, Louisiana Dept. Conservation
63. Alton A. Kellar	Chairman, Hancock County Board of Supervisors, Bay St. Louis, Mississippi
64. Bill Gunter	U. S. Representative from State of Florida
65. Bay Haas	County Commissioner, Mobile County Commissioners, Alabama
66. Robert B. Doyle	City Commissioner, Mobile, Alabama
67. Jack Different	Representing Harrison County Board of Supervisors, Biloxi, Mississippi
68. Terry Truesdell	Program Director, Environmental Action Group, University of Florida

<u>Name</u>	<u>Agency, Organization, or Individual</u>
69. Austin W. Lewis	Attorney, American Petroleum Institute (API)
70. Frank Ikard	President, API
71. Richard B. Palmer	Senior Vice President, W/Hemisphere Prod. and Worldwide Expl., Texaco, Inc.
72. L. C. Soileau, III	President, Chevron Oil Company
73. Warren M. Marshall	Prod. Manager, Shell, Offshore Division, Chairman, Offshore Operators Committee
74. Dr. Gordon Freys	Senior Staff Geologist, Chevron Oil Co.
75. Dr. John McKetta	Professor, Chemical Eng., Univ. Texas
76. G. Sage Lyons	Speaker of the House, State of Alabama
77. Carl H. Oppenheimer	Professor, Microbiology, Univ. Texas
78. Isdale Margaret (Dr. Dale) Straughan	Allan Hancock Foundation, Univ. So. California
79. Randall Meyer	President, Exxon Company, U.S.A.
80. Charles Moreton	Vice President, Gas Supply, Texas Gas Transmission Corporation
81. Dr. Charles Willingham	Senior Marine Biologist, Battelle Columbus Institute
82. W. J. Bowen	President, Florida Gas Company
83. Claude Golay	Assistant to Vice President, Prod. Chevron, Chairman, Clean Gulf Associates
84. Carl H. Savit	Senior Vice President, Western Geophysical Company, International Associate of Geophys. Contractors
85. Harvey J. Grimes	Manager, Environ. Engineering, Atlantic Richfield Company
86. Wayne McMahan	Executive Secretary to Jere Beasley Lt. Governor of Alabama
87. Oscar Corbin	Mayor, City of Ft. Meyers, Florida
88. Mrs. Ivan L. Farman	Vice President, Florida Division Izaak Walton League of America
89. Dr. James B. Rucker	Director, Mississippi Marine Resource Council
90. G. J. Tankersley	President East Ohio Gas Company, American Gas Association
91. Mrs. R. L. Sample	President, Save Our Bays, St. Petersburg
92. E. L. Petree	Vice President, Production, Gulf Oil Company, U.S.
93. Lyman E. Rogers	President, Florida League of Anglers, Inc.

<u>Name</u>	<u>Agency, Organization, or Individual</u>
94. Billy Maples	John E. Graham and Sons, Offshore Trawler, Inc.
95. Prof. J. William Futrell	Sierra Club Board of Directors
96. Ellen Winchester	Chairman, Florida Chapter of Sierra Club
97. Tommy Munro	Senior Vice President, National Oil Jobbers Council
98. Wayne Oaks	Executive Director, Gulfport Area Chamber of Commerce
99. Mrs. Henry A. Boudolf	Environ. Chairman for League of Womean Voters
100. William H. Holland	Mobile Area Chamber of Commerce
101. Charles D. Matthews	President, National Ocean Industries
102. C. LeDon Anchors	Greater Ft. Walton Beach Chamber of Commerce
103. Edward J. Keels	President, Mississippi Innkeeper Assoc.
104. Hal Scott	Director, Florida Audubon Society
105. Dr. Ted LaRoe	Vice President, Florida Audubon Society
106. James W. Hart, Jr.	Alabama Petroleum Council
107. Edward R. Yawn	Florida Farm Bureau Federation
108. Jeff Rankin on behalf of H. L. Culbreath	Tampa Electric Company
109. Patrick McCaffrey	Florida A & M University
110. Hon. S. Curtis Kiser	House of Representatives, State of Florida
111. Harold D. Lewis	Counsel, Assoc. Gen. Contractors of Amer., Florida Council
112. David Anthony	Vice President, Florida Defenders of the Environment
113. Richard Merrill	New Orleans Geological Society
114. R. F. Young	Assistant Land Manager, TransOcean Oil, Inc.
115. Robert Freeman	Basic Magnesia Inc., Port St. Joe, Fla.
116. Jon M. Muckleroy	National Petroleum Co., Inc., Florida
117. Mary Gollnick	Federation of Womens Clubs, Jacksonville, Florida
118. Frederick J. Mire	Petroleum Landmen's Assoc., New Orleans, Louisiana
119. Mrs. Peggy Hodges	Representing Francis Weston Audubon Society, Pensacola, Florida
120. Roy Young	Attorney, Florida Phosphate Council
121. M. W. Haas	Amer. Assoc. Petroleum Geologists

<u>Name</u>	<u>Agency, Organization, or Individual</u>
122. E. A. Adomat	Ex. Vice President, Florida Power/Light Company, Miami, Florida
123. George C. Matthews	Concerned Citizen, Naples, Florida
124. John P. Hilburn	Vice President, Planning & Environ. Control, Florida Steel Corp.
125. L. Wilson Trahin	Morgan City, Berwick, Patterson Area Chamber of Commerce
126. Gordon O. Jerauld	Florida Natural Gas Association
127. Ronald S. Spencer	Ex. Vice President, Florida State Chamber of Commerce
128. Allison R. Strickland	Concerned Citizen, Chassahowitzka, Florida
129. William P. Heineman	Vice President, United Gas Pipeline Co.
130. T. J. Burnett, Jr.	Louisiana Land & Exploration Company
131. D. W. Snyder	Chairman, Mississippi Public Service Comm.
132. Norman A. Johnson	Mississippi Public Service Commission
133. Martin Northrup	Conservationist, Maitland, Florida
134. Thomas W. Suther	Manager, Santa Rose County (Florida) Chamber of Commerce
135. Hon. John Sparkman	U. S. Senator from Alabama
136. Hon. Robert E. Jones	U. S. Representative 5th District, Alabama
137. Hon. Bill Nichols	U. S. Representative 3rd District, Alabama
138. Hon. Pierre Pelham	U. S. Senator, Alabama
139. Joseph L. Fine	State Senator, 5th District, Alabama
140. E. C. (Crum) Foshee	State Senator, 20th District, Alabama
141. J. D. Hays	Alabama Farm Bureau Federation, Montgomery, Alabama
142. A. S. Lacy	Vice President, Alabama Gas Corp., Birmingham, Alabama
143. J. Frank Keown	Representing Tennessee River Valley Assoc., Decatur, Alabama
144. Claude Allison	Ex. Director, Alabama Liquified Petroleum Gas Assoc., Montgomery, Alabama
145. C. T. Williams, Jr.	President, Southwestern Virginia Gas Company, Baltimore, Maryland
146. John S. Taylor	Owner, Sea Shell Hotel, Clearwater Beach, Florida
147. Jessie M. S. Crombie	Concerned Citizen, Ft. Lauderdale, Florida
148. Donald S. Bitteringer	Chairman of Board, Washington Gas Light Company, Washington, D. C.
149. Donald L. Bottorff	Executive Manager, Fort Meyers - Lee County Chamber of Commerce
150. Arthur K. Smith	Concerned Citizen, Boca Raton, Florida
151. Rick Diaz	Manager, Causeway Inn, Beach Resort, Tampa, Florida

<u>Name</u>	<u>Agency, Organization, or Individual</u>
152. William J. Hearin	Publisher, Mobile Press Register, Mobile, Alabama
153. Antonio E. Rios	Concerned Citizen, Miami, Florida
154. L. F. Moreno	Concerned Citizen, Miami, Florida
155. R. B. Jenkins	Concerned Citizen, Lantana, Florida
156. Borton O. Ahlstrom	Florida Poultry Federation
157. Montague G. Ball	Concerned Citizen, Port Charlotte, Fla.
158. Charles Butler	Concerned Citizen, Lake Worth, Florida
159. Ernest C. Rice	Concerned Citizen, Wilton Manors, Fla.
160. J. R. Antink	Executive Director, Florida Dairy Prod. Assoc., Orlando, Florida
161. Rod Dixon	Vice President, Magic Carpet Travel, Inc., Miami, Florida
162. Frank J. Sellinger	Vice President, Engineering Anheuser- Busch, Inc., St. Louis Mo.
163. Mrs. C. Ettele	Concerned Citizen, St. Petersburg, Fla.
164. Harold L. Fenner	Concerned Citizen, Coral Gables, Fla.
165. Joe A. Edmisten	University of West Florida, Pensacola, Florida
166. S. V. McCollum	Executive Vice President, Tenneco Oil Company, Houston, Texas
167. J. B. Simpson	Vice President, Consumers Power Company, Michigan
168. Louis R. Reif	Vice President, National Fuel Gas Company, New York
169. Richard T. Hansen	Director of Gas Rates, City of Indianapolis, Indiana
170. Paul H. Unverzagt	Concerned Citizen, Destin, Florida
171. George T. Jones	Assistant Vice President, Northern Illinois Gas Company, Illinois
172. Jerome J. McGrath	Representing Independent Natural Gas Assoc. America, Washington, D. C.
173. Warren Carver	Mayor, Bay St. Louis, Mississippi
174. Joseph P. Thomas	Vice President, Peoples Gas Light and Coke Company, Chicago, Illinois
175. Michael R. Smith	Director, Hancock County Port & Harbor Commission, Mississippi
176. Harmon W. Shields	Director, Division Marine Resources, Dept. Natural Resources, State of Florida
177. Gus Stevens	Representing Mississippi Gulf Coast Restaurant Assoc., Mississippi
178. J. W. Turner	Representing Mississippi Restaurant Association
179. W. D. Simmons	Mayor, Long Beach, Mississippi
180. W. H. Baker	Skelly Oil Company

<u>Name</u>	<u>Agency, Organization, or Individual</u>
181. Cecil Von Hagen	Petroleum Consultant, Houston, Texas
182. R. Wayne Bowen	Concerned Citizen, Seminole, Florida
183. M. R. Stierheim	County Administrator, Board of County Commissioner, Pinellas County, Florida
184. Mendell M. Davis	Executive Vice President, Jackson County Chamber of Commerce, Mississippi
185. Donald C. Lutken	President, Mississippi Power & Light Company
186. Joseph F. Boardman, Jr.	Harrison County Development Commission, Mississippi
187. Lee Spence	President Pass Christian, Mississippi
188. Mrs. Cleve Allen, Jr.	President, The Garden Clubs of Mississippi
189. Anonymous for Mayor	Bd. Aldermen, Moss Point, Mississippi
190. Glen Young	Gulf Coast Charter Boat Assoc., Biloxi, Mississippi
191. Sidney D. Upham	Director, Mississippi-Alabama Sea Grant Consortium, Dauphin Island, Alabama
192. Jack Parsons	Attorney, Concerned Citizen, Wiggins, Mississippi
193. Anonymous for Mayor	Bd. of Alderman, Ocean Springs, Mississippi
194. John A. Martinieri	Director, Biloxi Port Commission, Mississippi
195. Anonymous for Mayor	Bd. of Aldermen, Long Beach, Mississippi
196. Anonymous for Mayor	City Council, Gulfport, Mississippi
197. Mrs. Hazel Harrison Portwood	President, Gulf Pines Council, Girl Scouts of America, Gulfport, Miss.
198. Mrs. William A. Gregurich	Concerned Citizen, Gulfport, Miss.
199. August B. Taconi	Cable TV-4, Biloxi, Mississippi
200. John C. Dees	Chairman of Board, Bank of Wiggins, Wiggins, Mississippi
201. Gary Holland	Editor, Mississippi Press Register & Mississippi Press, Pascagoula, Miss.
202. Anonymous for Mayor	Board of Aldermen, Pass Christian, Mississippi
203. Mrs. L. J. Caillavet	Concerned Citizen, Biloxi, Mississippi
204. Anonymous for Board of Supervisors	Hancock County, Mississippi
205. Ralph E. Whitson	Works Manager, Aluminum Company of America

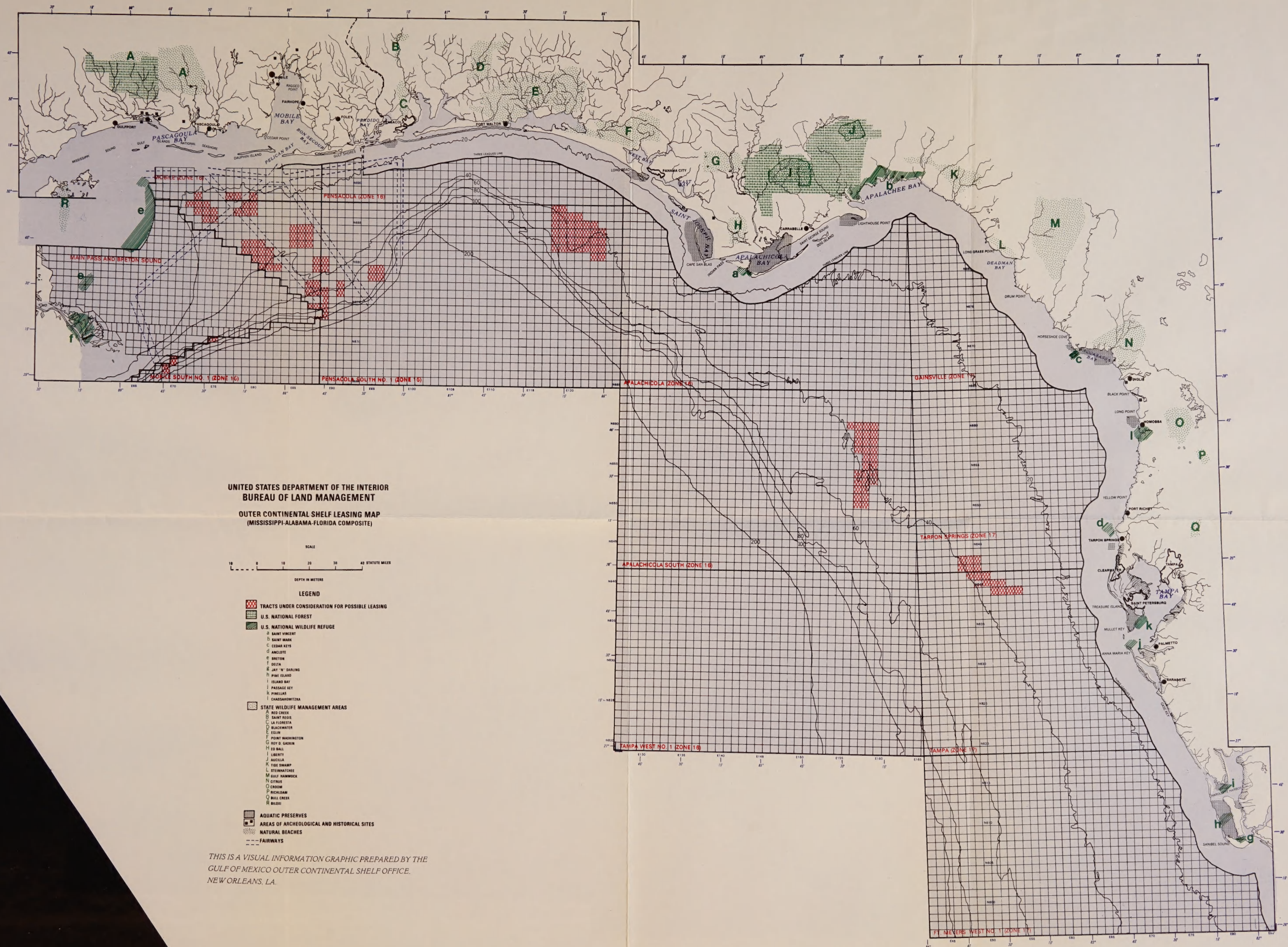
<u>Name</u>	<u>Agency, Organization, or Individual</u>
206. J. H. Frasher	President, Teledyne Exploration Houston, Texas
207. Houstoun M. Sadler	Concerned Citizen, Ponte Vedra Beach, Florida
208. Eric P. Horne	Concerned Citizen, Ft. Lauderdale, Fla.
209. M. James Stevens	Confederate Inn, Gulfport, Mississippi
210. W. A. Campbell	Concerned Citizen, St. Petersburg, Fla.
211. J. C. Magner	Vice President, Explor. & Prod., Rowan Companies, Houston, Texas
212. Wm. H. Funk	Executive Vice President, Gardinier, Inc. Tampa, Florida
213. Paul W. Herking	Vice President, The Cincinnati Gas & Electric Company, Cincinnati, Ohio
214. Steven C. Doychak	Executive Vice President, Greater Clearwater Chamber of Commerce, Fla.
215. John F. Nelson	Executive Vice President, Golden Gem Growers, Inc., Umatilla, Florida
216. James V. Foody	Concerned Citizen, Miami, Florida
217. James J. Britton	Executive Vice President, Alabama Chamber of Commerce, Montgomery, Alabama
218. Jorge E. Blay	Concerned Citizen, Coral Gables, Fla.
219. J. B. Randel, Jr.	Vice President, Gas Operation, Public Service Electric and Gas Company, Newark, New Jersey
220. Mrs. C. Ian Hood	President, Joseph W. Little, Board Member, Alachua Audubon Society, Gainesville, Florida
221. John B. Opdyke	Concerned Citizen, Gainesville, Florida
222. Mrs. Myrt Jones	Spokesman, Save Our Bay, Mobile, Ala.
223. S. Orlofsky	Vice President, Columbia Gas System Service Corp.
224. B. A. Monaghan	President, Vulcan Materials Company, Birmingham, Alabama
225. William A. Hover	Vice President, Pennzoil Company Houston, Texas
226. William H. Clark	President, Pensacola Area Chamber of Commerce, Pensacola, Florida
227. Walter O..(signature only - Illegible)	Concerned Citizen, Lighthouse Pt., Fla.
228. J. D. Barnes	Vice President, Natural Gas Company, Inc., Charlotte, North Carolina
229. Virginia S. Young	Mayor, Fort Lauderdale, Florida
230. Wilbur B. Nolen, Jr.	Executive Secretary, Alabama State Soil and Water Conservation Committee, Montgomery, Alabama

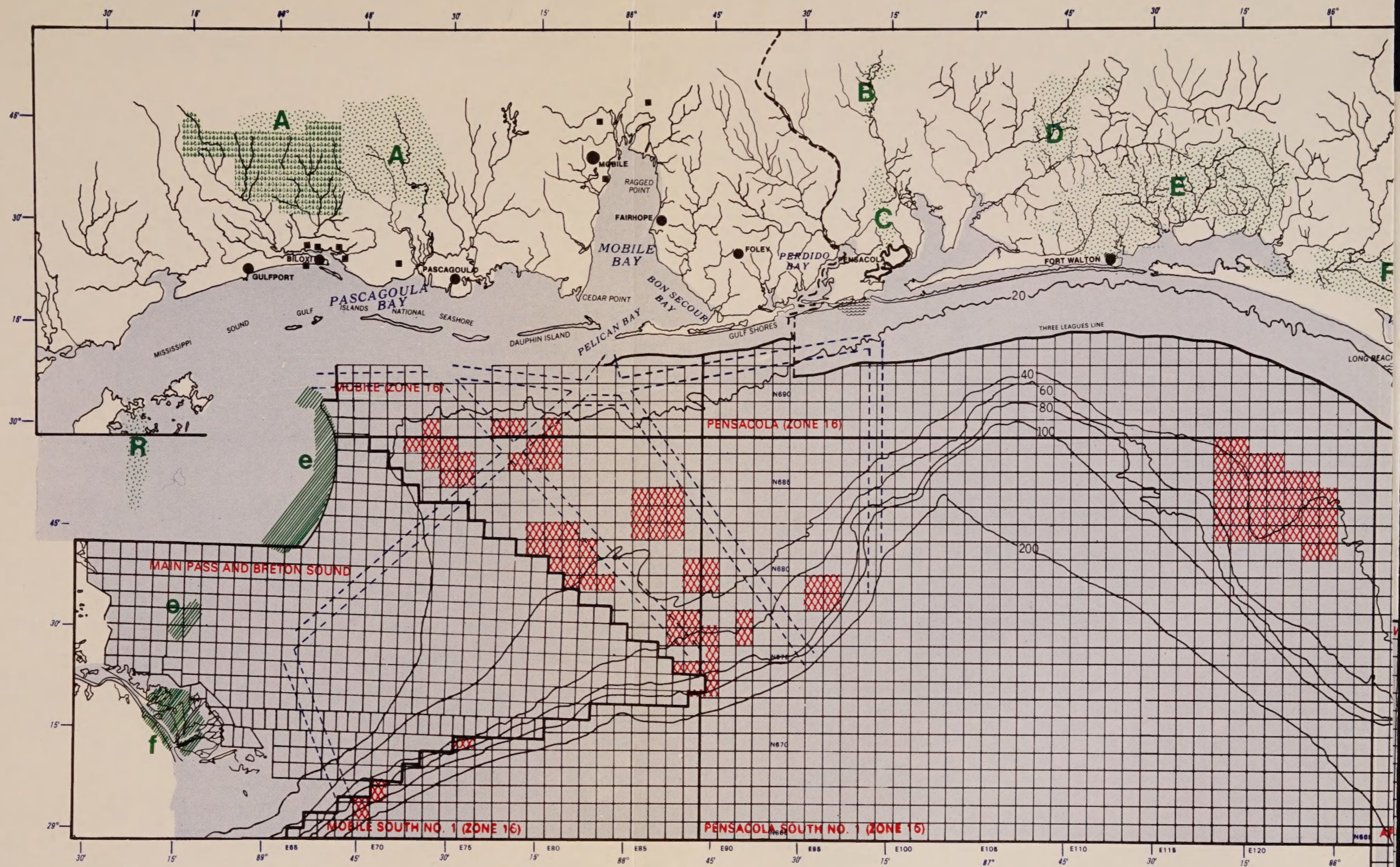
<u>Name</u>	<u>Agency, Organization, or Individual</u>
231. Paul Rodgers	National Association of Regulatory Utility Commissioners, Washington, D.C.
232. Randolph Hodges	Executive Director, Florida Dept. Natural Resources, Tallahassee, Fla.
233. Nicholas M. Haas	Chairman, Environ. Protection Committee, Hancock County Chamber of Commerce/ Bay St. Louis, Mississippi
234. Earl Hutto	State Representative - 8th District, Panama City, Florida
235. Edward L. Flom	President, Florida Steel Corp., Fla.
236. Herb Pruett	President, Florida Skin Divers Assoc., Miami, Florida
237. Joyce A. Meitin	Florida Federation of Womens Clubs, Temple Terrace, Florida
238. Zeb Mayhew	Concerned Citizen, Miami, Florida
239. John A. McCoy	Dresser Industries, Houston, Texas
240. E. E. Ellis, Jr.	International Paper Company, Mobile, Alabama
241. Isaac W. Norman	Vice President, Highland Resources, Inc. Houston, Texas
242. Anonymous	City of Clearwater, Florida
243. Jackson C. Hinds	President, Southern Gas Assoc., Dallas, Texas
244. William L. Dickinson	U. S. Representative, 2nd District, Alabama
245. Hon. James O. Eastland	U. S. Senator from Mississippi
246. David R. Bowen	U. S. Representative, 2nd District, Mississippi
247. Gillespie V. Montgomery	U. S. Representative, 3rd District, Mississippi
248. Thad Cochran	U. S. Representative, 4th District, Mississippi
249. Trent Lott	U. S. Representative, 5th District, Mississippi
250. John T. O'Keefe	President, Mississippi Manufacturers Association, Jackson, Mississippi
251. Sam C. Spivey	Executive Vice President, Alabama Service Station Association
252. Richard Belser	Alabama Petroleum Jobbers Association
253. Robert McHugh	Editor, THE DAILY HERALD, Biloxi, Mississippi
254. Leonard L. Shertzer, Jr.	Secretary, Alabama Roadbuilders Assoc., Alabama
255. W. Harvey Hunt, Jr.	Editor, (newspaper), Waynesboro, Mississippi

<u>Name</u>	<u>Agency, Organization, or Individual</u>
256. Charles D. Haynes	Petroleum Engineer, University Alabama
257. James I. Ritchie	Executive Vice President, Alabama Trucking Association
258. M. D. Gilmer	Commissioner, Alabama Agriculture and Industries Dept., Mobile, Alabama
259. Jim L. Odom	President, Chamber of Commerce, Executive Association of Alabama
260. Joe W. Graham	Executive Vice President, Alabama Forestry Association, Montgomery
261. L. D. "Dick" Owen, Jr.	State Senator, 25th District, Bay Minette, Alabama
262. W. Tom Jones	State Senator, Montgomery, Alabama
263. James B. Allen	U. S. Senator from Alabama
264. Guy E. McAliley	President, Alabama Natural Gas Assoc., Birmingham, Alabama
265. Winston Stewart	Executive Director, Association of County Commissions, Alabama
266. William J. Gehlen	Division Vice President, Scott Paper Company, Mobile, Alabama
267. W. Cooper Green	President, Jefferson County Commission, Birmingham, Alabama
268. Joe A. McCluney	Executive Vice President, Jasper Area Chamber of Commerce, Jasper, Alabama
269. Hugh P. Foreman	President, Montgomery Area Chamber of Commerce, Montgomery, Alabama
270. Frank B. Ruffer	Executive Secretary, Alabama Asphalt Pavement Association, Alabama
271. President	Huntsville-Madison County Chamber of Commerce, Alabama
272. H. T. Odum, H. McKellar, W. Smith, M. Sell, T. Ahlstrom, D. Young	Professors, Dept. Environmental Engineering Sciences, University of Florida/Gainesville
273. Hon. John C. Stennis	U. S. Senator, Mississippi
274. George Seibels	Mayor, City of Birmingham, Alabama
275. Eland Anthony	President, Associated Industries of Alabama
276. Fred Sington	President, Birmingham Area Chamber of Commerce
277. Resolution No. 990-73	Resolution of the City Council of the City of Birmingham, Alabama
278. Paul Pate	Director, Bureau of Environmental Health, Jefferson County Dept. of Health

<u>Name</u>	<u>Agency, Organization, or Individual</u>
279. J. R. Maumenee	President, Alabama Dry Dock and Shipbuilding Company
280. R. J. O'Brien	Vice President, Shell Oil Co.
281. Isabel P. Gonzalez	Citizen, Miami, Florida
282. John P. Simpon	Manager, Technical Sales, Domestic Drilling Services, Baroid Division, NL Industries, Inc.
283. Hon. Tom Bevill	Fourth Congressional District of Alabama
284. Sherwood W. Wise, Jr.	Assistant Professor of Geology, Florida State University
285. Phillip W. Watts	Mayor, Moss Point, Mississippi
286. Resolution of Sarasota	City Commission submitted by City Auditor and Clerk - Robert A. McLelland
287. C. E. Bradshaw, Jr.	President, Hi-Acres Concentrate, Inc.
288. Alicia V. Linzey	President, Mobile Bay Audubon Society
289. J. Howard Hoffer	Private Citizen, Denver, Colorado
290. John H. Buchanan, Jr.	U. S. Congressman, 6th District, Ala.
291. Jamie L. Whitten	U. S. Congressman, 1st District, Miss.
292. Sam M. Gibbons	U. S. Congressman, 7th District, Fla.
293. Walter Flowers	U. S. Congressman, 7th District, Ala.
294. Ted Randell	State Representative, District 90, Florida House of Representatives
295. Eugene M. Shorb	On Behalf of Northern Indiana Public Service Company
296. Harold W. Hunt	Private Citizen of New Orleans, Louisiana
297. Frank J. Deutschmann	Senior Vice President, Tidewater Marine Service, Inc., New Orleans, Louisiana
298. Malcolm W. Schroeder	President, Lee County Bank, Fort Myers, Florida
299. Howard G. Hamilton	Owner of Palm Pavilion of Clearwater, Inc. Clearwater Beach, Florida
300. E. J. Hagstette, Jr.	Vice President of Baroid Division, NL Industries, Inc., Houston, Texas
301. Herbert S. Hilton	Private Citizen, Miami, Florida
302. Sam T. Tringali	Owner of Pioneer Shrimp Company, Inc., Miami, Florida
303. C. Gordon Green	Private Citizen, Ormond Beach, Florida
304. Gloria A. Molina	Private Citizen, Coral Gables, Florida
305. R. E. Kreider, Jr.	Private Citizen, Coral Gables, Florida
306. Thomas J. Henson	Vice President, Thatcher Glass Manufacturing Company, Tampa, Florida

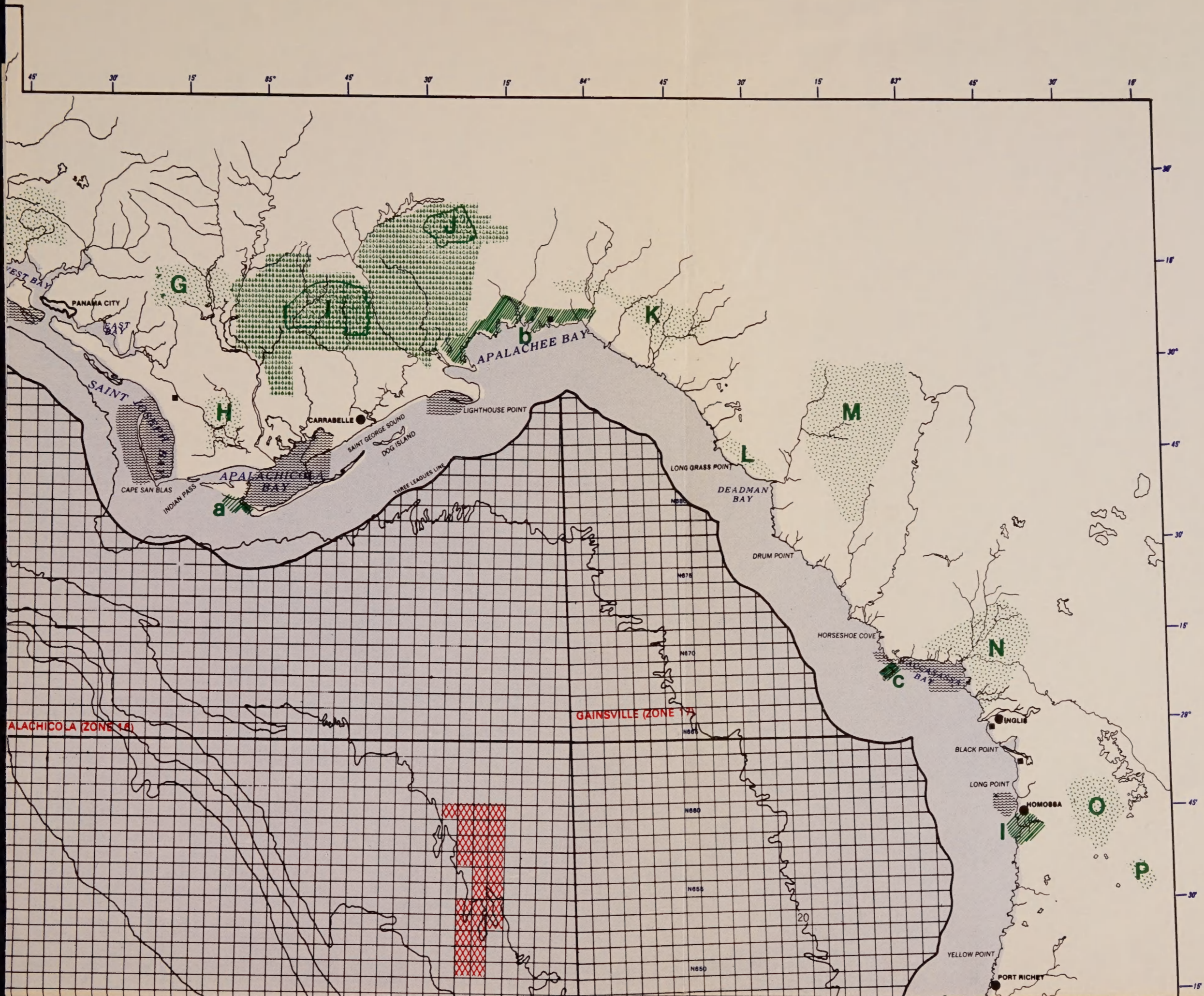
<u>Name</u>	<u>Agency, Organization, or Individual</u>
307. R. C. Dixon	Senior Vice President, Trunkline Gas Company, Houston, Texas
308. Samuel Y. Gibbons	Mayor, Town of Longboat Key Florida
309. Barney Weeks	President of Alabama Labor Council, AFL-CIO
310. Dail Gibbs	Manager of Alabama Rural Electric Association of Cooperatives
311. John J. Flynn	Private Citizen, Clearwater, Florida
312. Herbert P. Riggs, D.D.S.	Private Citizen, Daytona Beach, Florida
313. Edward G. Ballance	Plant Manager of General Foods Corporation, Maxwell House Division, Jacksonville, Florida
314. Mr. Harris	Senate Joint Resolution 80 for Ala. Legislature
315. Wesley H. Mowery	Executive Vice President, American Association of Petroleum Landmen, Fort Worth, Texas
316. Joseph D. Marshburn	General Manager & Executive Vice President, Citrus World, Inc., Lake Wales, Florida
317. Emory L. Cocke	President, Suni-Citrus Products Co., Haines City, Florida
318. Raymond J. McGrath	Private Citizen, Jackson, Mississippi
319. P. J. McLaughlin	Executive Vice President, Union Camp Corporation, Wayne, New Jersey
320. Keith Dorrell	National Gypsum Company, Tampa, Fla.
321. William F. Quick	Private Citizen, Clearwater Beach, Fla.
322. Chris Jacob	Acting Chairman, Sierra Club, Delta Chapter



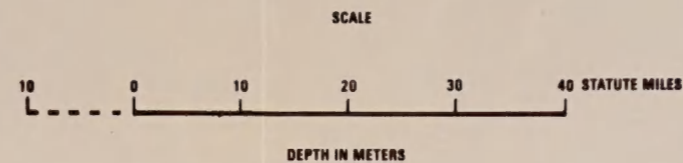


UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT


OUTER CONTINENTAL SHELF LEASING MAP





(MISSISSIPPI-ALABAMA-FLORIDA COMPOSITE)



LEGEND

 TRACTS UNDER CONSIDERATION FOR POSSIBLE LEASING

 U.S. NATIONAL FOREST

 U.S. NATIONAL WILDLIFE REFUGE

a SAINT VINCENT

b SAINT MARK

c CEDAR KEYS

d ANCLOTE

e BRETON

f DELTA

g JAY "N" DARLING


h PINE ISLAND

i ISLAND BAY

j PASSAGE KEY

k PINELLAS

l CHASSANOWITZKA

 STATE WILDLIFE MANAGEMENT AREAS

A RED CREEK

B SAINT REGIS

C LA FLORESTA

D BLACKWATER

E EGLIN

F POINT WASHINGTON

G ROY D. GASKIN

H ED BALL

I LIBERTY

J AUCILLA

K TIDE SWAMP

L STEINHATCHEE

M GULF HAMMOCK


N CITRUS


O CROOM


P RICHLOAM

Q BULL CREEK

R BILOXI

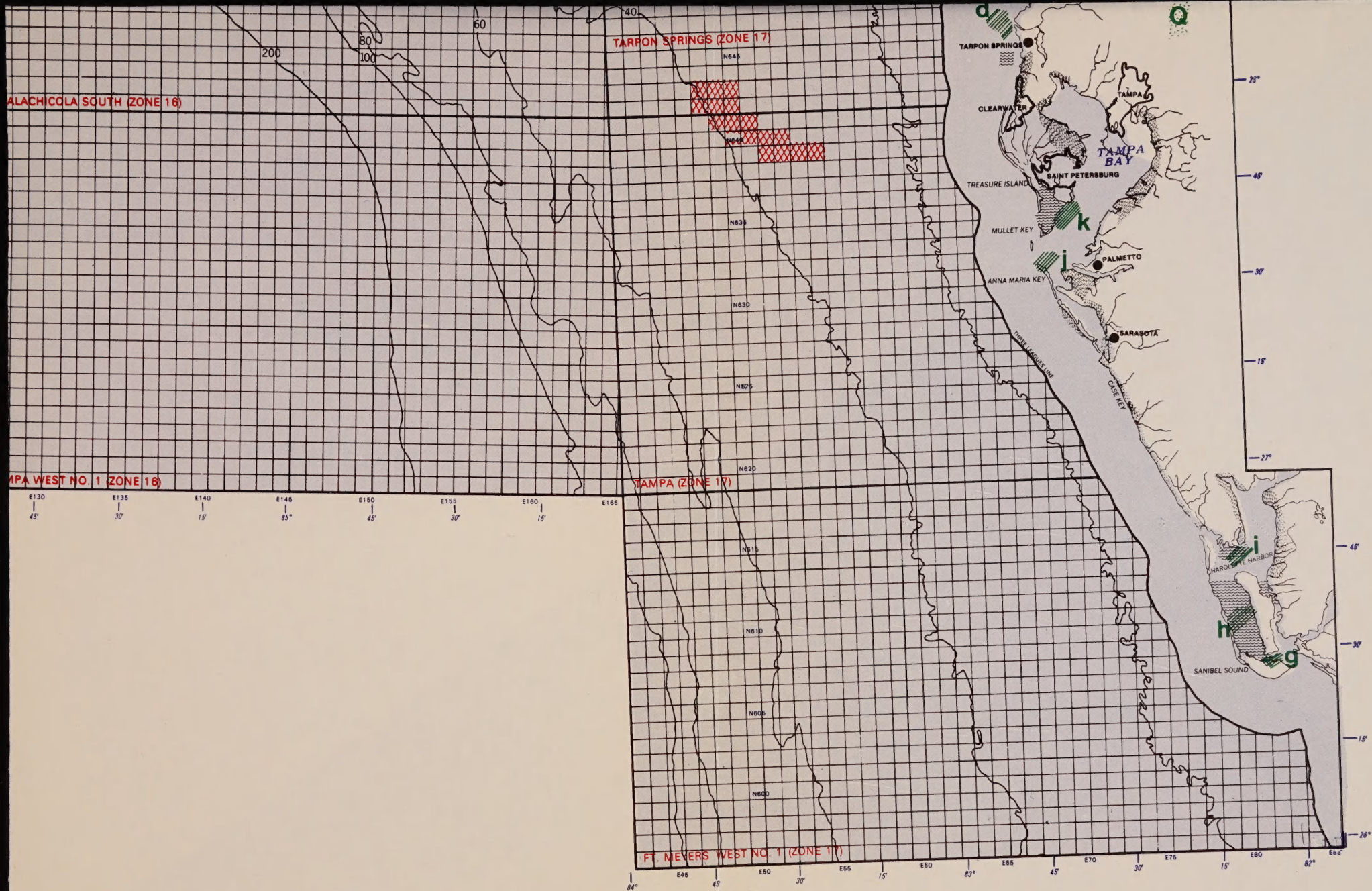
 AQUATIC PRESERVES

 AREAS OF ARCHEOLOGICAL AND HISTORICAL SITES

 NATURAL BEACHES

--- FAIRWAYS

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